ASTRONOMY AND THE BIBLE



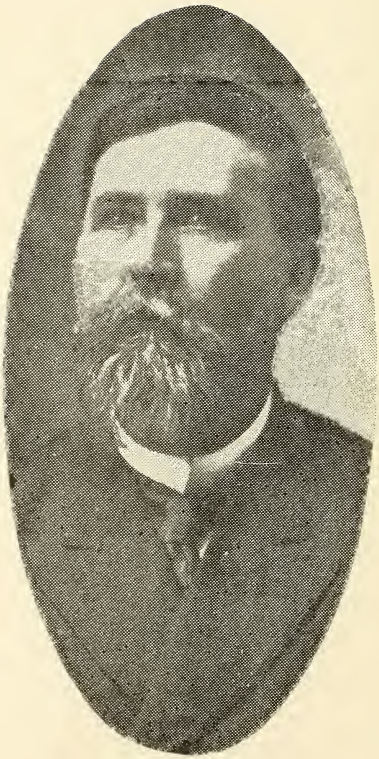
—BY—

CHAS. J. BURTON



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THE AUTHOR

Astronomy and the Bible

or God's Two Great Books

Nature and Revelation



—By—

Chas. J. Burton, Ph. B.

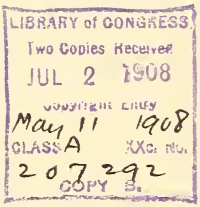
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"The heavens declare the glory of God, and the firmament showeth His handiwork".—Psa. 19:1.

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PREFACE.

The matter contained in this book is the result of many years of careful study of God and Nature. It is one of the author's favorite fields of investigation, and he has lectured at various places to appreciative audiences who took more than usual interest in the subjects treated.

The volume treats of the subject in a way not found in any other book on the subject.

Following is the plan:

Part one: 12 Introductory Lessons on the relation of the Bible to Astronomy.

Part two: 16 Outline Studies in Astronomy.

Part three: 16 Preparatory Bible Studies.

Part four: 18 Bible lessons in Outline. These cover all of "Bible History," and "God and His Works." In all, 62 lessons.

The author believes that a profound study of Astronomy will lead to greater reverence for the Creator.

I would that every one would become a student of the heavens,—God's great book of nature,—continually open for our meditation.

CHAS. J. BURTON,
Iowa Christian College.
Oskaloosa Iowa,
May 11, 1908.

PART ONE.

INTRODUCTORY LESSONS.

LESSON I. PURPOSE AND DESIGN.

"For thou hast created all things, and for thy pleasure they are and were created." *Rev.* 4: 11.

Our opening scripture is in the last book of the Bible. The careful, observant student will not be surprised to find such expressions as the above in nearly every portion of God's word. The divine writers under inspiration are a unit as to the origin of all things. They came into existence by the direct power of Jehovah.

The "all things" in the above passage mean the same as the *ta panta* of the Greek,

and they include the entire universe of God, the whole visible heavens,—sun, moon planets and stars.

What I wish to call your attention to specially in this lesson is the *purpose* of Jehovah in creating and upholding the universe. It is declared to be *for his pleasure.* It appears evident from the careful study of both nature and revelation that God works according to previous plan, design and purpose. "This is the purpose that is purposed upon the whole earth, and this is the hand that is stretched out upon all the nations." Isa. 14:26. "For the Lord of hosts hath purposed, and who shall disannul it? And his hand is stretched out, and who shall turn it back? verse 27. "For every purpose of the *Lord* shall be performed against Babylon, to make the land of Babylon a desolation without an inhabitant." Jer. 51:29. "For this shall the earth mourn and the heavens above be black: because I have spoken it, I have purposed it, and will not repent, neither will I turn back from it." Jer. 4:28. "Who hath saved us and called us with an holy calling, not according to our works, but according to his own pur-

pose and grace, which was given us in Christ Jesus before the world began." 2 Tim. 1:9.

But the order and beauty of nature teach the same lessons of design. We need not look beyond the solar system to find evidences of design. The arrangement and perfect working of all the members of this system impress the student that an All-wise Intelligence planned it, and an Omnipotent hand upholds and sustains it. Furthermore, the Creator has given the human mind the ability to discover the laws by which its five hundred to six hundred members are bound to the parent sun, and revolve about him with perfect order in regular times, at regular rates of motion, and at regular distances. This order, beauty and harmony of our system, which have been explained on exact mathematical principles, will ever continue to be so many arguments in favor of design.

The fact that the volume and dimensions of the sun have been measured and its mass or material weighed, as well as that of its attendant planets, is proof that the human mind was made in the image of Jehovah. Gen. 1:26.

From the above we have the following conclusion: First, there was intelligence

omniscient; after that, purpose; then the *divine energy* in action, which created the universe and now upholds and sustains it.

LESSON 2. THE FIRST VERSE OF GENESIS.

The Hebrew transliterated is as follows: *Bereshith bara* ELOHIM *eth hashamayim weeth haarets.* When rendered into English we have, *"In the beginning God created the heavens and the earth."*

1. *"In the beginning."* No one knows how far back in the history of the past this beginning was, but it was certainly very remote. God has not revealed it. Moses did not pretend to say *when* it was. We must be content with what we may be able to learn on this subject from science. While the Creator has given man searching and investigating capacities, yet there are many things past finding out in the counsels of God, and this may be one of them.

2. Elohim, *"God."* The name of the Supreme Being, which signifies in Hebrew, "strong," "mighty." El signifies the strong God, and nothing less than almighty strength could bring all things into exist-

ence. While the Hebrew original, Elohim, is plural, it does not mean a plurality of Gods, but a plurality of persons in the Godhead,—Father, Son and Holy Spirit. See Gen. 1:26. Also read Jno. 1:1-2: "In the beginning was the Word (logos), and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by Him; and without Him was not anything made that was made."

Another Hebrew name for the Diety is Yehowah, *"Jehovah,"* the existing One. See Isa. 12:2: "Behold God is my salvation; I will trust and not be afraid; for the Lord JEHOVAH is my strength and my song; he also is become my salvation.

In Gen. 17:1, he is revealed as El Shaddai, "the Almighty God."

3. *"Created."* This is the translation of the Hebrew word *bara,* which is the strongest of three words used many times in the original of the Hebrew Scriptures. It means to bring into existence, or cause something to be, which before had no existence. In this case, it was the universe.

4. *"The heaven and the earth."* By this expression is meant the entire universe of God, all material things—sun, moon, plan-

ets, satellites, stars, nebulae, comets, etc. "Lift up your eyes on high, and behold who hath created these things, that bringeth out their host by number; he calleth them all by names by the greatness of his might, for that he is strong in power; not one faileth." Isa. 40:26. "The sun and the moon and the stars, even all the host of heaven." Deut. 4:19. "God who made the world and all things therein, seeing that he is Lord of heaven and earth, dwelleth not in temples made with hands." Acts 17:24.

As we look out upon Jehovah's great universe, and behold the beauty, the grandeur and the magnificence of his works, either with the naked eye or by the help of the telescope, we are constrained to say in the language of the Psalmist, "O Lord, how manifold are thy works! In wisdom hast thou made them all; the earth is full of thy riches." Psa. 104:24.

From all of these considerations, we have three conclusions, summed up in one, viz: Atheism is folly; agnosticism is puerility; and infidelity is insanity. The atheist is the greatest of fools. "The *fool* hath said in his heart, there is no *God*." Psa. 14:1.

LESSON 3. THE BUILDING OF THE UNIVERSE.

"But He who built all things is God." Heb. 3:4. *"Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made out of things which do appear."* Heb. 11:3.

Not only the solar system, but the entire universe was most likely a growth, a development. God first created the *material.* Then, out of the created material, He built, prepared or constructed the universe. This is in accord with the perfection of other things attributed to God. It took sixteen hundred years for God to make, construct, or write the Bible. And it seems evident that it took a long time, probably ages, for the Creator to build the beautiful universe as we now see it from, or out of, the original chaos. Read carefully the first chapter of Genesis entire. We are not, then, to look upon the magnificent display of stars, nebulae and comets as being *instantly* set into the heavens as they appear today, but we are to think of them as having come to their present state of beauty and order through a long process of development.

The word translated "built" in Heb. 3:4, is from the Greek, *kataskevadzo*, which means to *make, to prepare, to construct.* Let us illustrate. "For there was a tabernacle *made* (kateskeuasthe); the first wherein was the candlestick, etc., Heb. 9:2. "By faith, Noah being warned of God of things not seen as yet, moved with fear, *prepared* (kateskeuasen) an ark to the saving of his house," Heb. 11:7. Of course the tabernacle and the ark were constructed out of pre-existing material, and so we reason that God constructed or built the universe from the material which he had previously created.

It appears evident that the growth and development of the universe is *progressive* and *continuous.* Nothing is at rest. Everything is in motion, and change is seen on the very face of the sky. Reasoning from analogy we have, first the acorn; then the tender plant; after that the strong oak of a hundred pears; and after that—decay and death. This seems to be God's method everywhere. Look at the changes which have come over our earth during past ages! Shall we say that the earth was *born?* That it was once *young?* What is its age now? What stage has it reached? And what is

to become of it? It certainly has a destiny. Read 2 Pet. 3:10. What is true of the earth is most likely true of the whole visible universe of God. "The heavens shall vanish away like smoke, and the earth shall wax old like a garment." Isa. 51:6. "Of old hast thou laid the foundation of the earth, and the heavens are the work of thy hands. They shall perish, but thou shalt endure: Yea, all of them shall wax old like a garment; as a vesture shalt thou change them, and they shall be changed." Psa. 102:25-26.

Now, coming back to the original thought of this lesson, the Great Master Builder or Architect of the heavens is God (Theos). "He who built all things is God." "God who made the world and all things therein, seeing that he is Lord of heaven and earth, dwelleth not in temples made with hands." Acts 17:24. It is certain that the apostolic idea—the Christian conception of the universe is, *that God made all.* "For of him, and through him, and to him, are all things." Rom. 11:36. "But to us there is but one God, the Father, of whom are all things, and we in him; and one Lord Jesus Christ, by whom are all things and we by him." 1 Cor. 8:6.

The closing thought of this lesson is the following: That what the Creator undertook to do and to commence, he carried to completion. "Thus the heavens and the earth were finished, and all the host of them," Gen. 2:1. How unlike God is man in this respect! Many men and women begin, it may be, noble undertakings, but on account of difficulties and perhaps for other reasons, they become discouraged and discontinue the work so well begun. But not so with Jehovah. He carries forward to completion all of his undertakings. It may take him long epochs of time, but he will bring it to pass.

LESSON 4. OUR ANNUAL EXCURSION AROUND THE SUN.

"He stretcheth out the north over the empty place, and hangeth the earth upon nothing." Job 26:7.

The most wonderful thought for the consideration and reflection of man is the fact that our earth, with its cargo of fifteen hundred millions of human beings, is flying through space at the rate of eighteen and

a half miles per second, night and day, and never stopping. But the great masses of humanity never stop to consider.

The earth is suspended in space, or in the language of Job, *"hung upon nothing;"* but it is constantly in motion, and is held to the central sun by the invisible power, known as the attraction of gravitation. The law in natural philosophy is, that a body once in motion moves in a straight line, unless acted upon by some external force. The "external" force, in this case, is the sun. The earth has a tendency to move in a straight line, but the sun will not allow it to do so, and therefore it revolves around him.

We will start on our annual excursion around the sun January the first, and take note of the beautiful things we see on the journey. Every thoughtful person has noticed the changes on the face of the sky at different times of the year. Those stars and constellations which pass the meridian in the early part of the night at the middle of January will have floated westward 30 degrees by the middle of February. The reason of this is, that the earth has actually moved eastward 30 degrees in its revolution

around the sun, leaving those objects behind. In reality, the stars have not moved westward, but the earth *has moved eastward.*

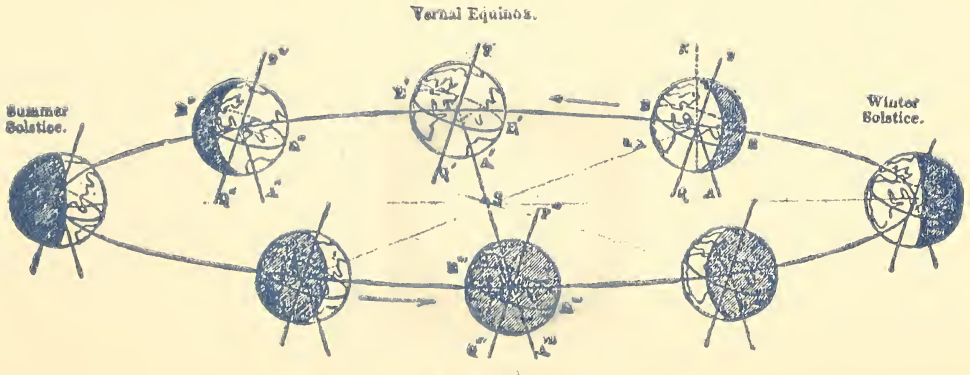
To get the most out of this journey, keep your text-book on Astronomy and your Bible close at hand; and do not forget to take along with you a blank book of something like a hundred pages. This blank book will be very valuable to you, if you will carefully note down the results of your observations during the journey.

1. *January.* The face of the sky at night during the month of January is rich in magnificent scenery; and he who fails to profit by study and reflection has missed his opportunity till another January has come. *Taurus,* the Bull, crossed by the ecleptic, is prominent this month; and south of this constellation is *Orion,* the Hunter. Look to the north of Taurus and you will find Aurega, the Charioteer. There are other constellations, but these are the prominent ones. Some of the magnificent objects to pass the meridian between eight and ten o'clock at night are these: The Pleiades, (Job 38:31), Aldeberan, a star of the first



SUN SPOTS—See pages 64-66.

THE SEASONS



Study the above illustration to understand the phenomena of the seasons. It shows the positions of the earth at different times in the year, summer, winter, autumn and spring, the sun being in the center at "S"

magnitude, pale rose in color, and 28 light years from our system; Bellatrix, Rigel, Betalgeuse and Capella, which is 34 light years from us and emits 250 times as much light as our Sun. See a good map for the location of these stars.

2. *February.* The January stars have now moved westward (apparently), and some new constellations will pass the meridian early in the night during February. You will find the constellation of *Gemini,* the Twins, in the Zodiac and crossed by the ecliptic. To the southwest is *Canis Minor,* and way down in the southern heavens is *Canis Major.* Note down on your note book and study the following stars:

(1). Sirius, the brightest star in the heavens, eight and a half light years from the solar system.

(2). Castor and Pollox in Gemini, a little north of the ecliptic. These two stars are near each other and Pollox is the brighter of the two.

(3). Procyon, a first magnitude star in Canis Minor is nine and a half light years from the earth.

3. *March.* The February stars have floated on toward the west, and now we will

study other objects. You will note that we are mentioning only the more prominent objects as we pass along, but I trust you will consider the smaller ones in detail and keep the results of your observations in your blank book. The constellation of *Cancer* is crossed by the ecliptic. Portions of *Ursa Major, Lynx, Leo* and *Leo Minor* are in the northern heavens, while *Sextans, Hydra, Monoceros* and *Argo* are south of the ecliptic.

While there are few bright stars to be seen in this portion of our lesson, yet there are some interesting objects for our observation and reflection.

(1). Just north of the ecliptic in Cancer is *"Praesepe,"* or the *Bee Hive* which can be seen on a dark night. As seen through a good telescope, it is found to be a coarse cluster of stars, about 150 in all.

(2). About two degrees south of the Bee Hive is a small star known as *Asellus Australis.* It is recorded that the planet Jupiter eclipsed this star on the 3rd of Sept., B. C. 240.

(3). A few degrees north of the ecliptic in Leo is the *"Radiant"* point of the *Leonids,* or November meteors. These meteors

start from this point, and shoot towards every part of the heavens. The earth crosses their path Nov. 12-15 of each year. The whole heavens were full of those meteors during the shower of 1833, it being estimated that more than 500,000 of them fell. We may expect another shower in 1933, as a greater shower than usual falls about every 33 years.

(4). South and east of Canis Major is *Canopus* in Argo Navis, which ranks next to Sirius in brightness. This star is one of the very large bodies in the universe, and at an immense distance from our system. It is visible in the southern states.

4. *April.* On the first day of April our journey around the sun is one-fourth completed; and those stars which were on the meridian January first, are now on the western horizon April first.

(1). You will notice a first magnitude star, *Regulus,* nearly on the ecliptic in Leo. This star is so close to the ecliptic that it is almost covered by the Sun on August 20th. It is many times occulted by the moon.

(2). *Denabola,* a second magnitude star is also in Leo, nearly due east from Regulus.

(3). North and east of Leo Minor, in the constellation of Ursa Major are three bright

stars belonging to the "Dipper." Every school boy and girl knows the "Pointers," *Dubhe* and *Merak,* because they point nearly to Polaris, the pole star.

Nothing of special interest in the southern heaven this month, and so we pass on.

5. *May.* The stars which passed the meridian from 8 to 10 o'clock p. m., during April, having floated on towards the west, we are now ready to take observations of the May skies.

(1). A little south of the ecliptic in Virgo is *Spica,* a star of the first magnitude. This star is approaching the solar system at the rate of 9 miles per second. The spectroscope reveals the fact that Spica revolves around the common center of gravity of itself and a dark companion, at the rate of not less than 56 miles a second, the orbit being six million miles in diameter.

(2). In Virgo is found the densest *Nebular* region of the heavens. More than 500 Nebulae are in this region, Sir Wm. Herschel having discovered nearly half of them with his great reflector.

(3). In the far south is the constellation, Centaurus, but its stars can be seen only in southern latitudes. *Alpha,* the nearest star

to the solar system is in this constellation. It is four and a half light years from our system.

(4). In the northern heavens you will find four other bright stars of the "Dipper" in Ursa Major. One of them, *Mizar,* may be the more noted on account of its companion, Alcor. It is at the bend of the "dipper's" handle

6. *June.* At the end of this month we will have accomplished the first half of our annual journey around the sun, for it will then have been six months since we started, January 1.

(1). Just north of the ecliptic in *Libra* will be found a globular cluster of more than 200 stars. Small telescopes reveal it as a beautiful nebulous object.

(2). Arcturus in the constellation of Bootes, a star of first magnitude, and the second brightest after Sirius, is supposed to be speeding through space at not less than 55 miles a second, or three times as rapidly as our earth. It is many times larger than our great luminary.

(3). The constellation of Dârco, the Serpent, (see Job 26:13) contains one of the most interesting stars in the northern heav-

ens, *Thuban*. This was our pole star 4,500 years ago.

In closing this month's observations, please note that the sun was at his greatest Norther Declination on June 21, being then in the constellation of Gemini. Also remember that at the end of June, our earth is on the opposite side of the sun from where it was on beginning the journey, January 1; and that those stars which were on the meridian about 9 o'clock p. m., January 1, are now lost in the brilliancy of the sun.

7. *July*. Some new constellations and stars will pass the meridian at 9 o'clock p. m. about the middle of July. Those are the stars which were hid in the brilliancy of the sun six months ago. Can you calculate the distance which the earth has traveled during the six months?

If you have been a close observer since starting, and have carefully noted all objects of interest on the way, your blank book is almost filled, and you must have another one for the remainder of the journey.

(1). The ninth constellation of the Zodiac is *"Scorpio,"* and the most beautiful. Its only star of the first magnitude is *Antares*, which is just south of the ecliptic.

There are some pretty Nebulous clusters in this constellation. Use a 3-inch telescope and find some of them.

(2). In the constellation, *Hercules,* north of the celestial equator, you can see through the telescope its most beautiful object a star cluster. A keen penetrating eye can see it on a dark night without the aid of the telescope. At the Harvard observatory, 724 stars have been counted outside the Nucleus.

It has been estimated that this cluster is 558,000 millions of miles in diameter, and 65 light years from the solar system.

(3). In the northern part of *Draco* is situated the north pole of the ecliptic, and therefore all portions of the ecliptic are 90 degrees from it.

8. *August.* The July stars having passed towards the West, we are now ready to take observations of some new stars.

(1). *Lyra,* the Harp, in the Northern heavens contains a magnificent star of the first magnitude, *Vega.* Through the telescope it shines with the brilliancy of an electric arc light. The star is approaching our system at the rate of nine and a half miles per second. It is more than 21 light years

from our system. In about 11,500 years it will be our north pole star.

(2). South and east of Vega is the wonderful *Ring Nebula,* which has been photographed.

(3). North of the celestial equator in *Aquila* is found a first magnitude star, *Altair,* having a pale yellow color. It is about thirteen and a half light years from the sun.

(4). Some five degrees east of Altair, a meteor stream, known as the *Aquilids* radiate. These meteors are visible from June 7 to Aug. 12.

9. *September.* Remember that the autumnal equinox occurs about the end of the third week of this month, when the sun "crosses the line," or the celestial equator.

(1). The constellation *Capricornus* is crossed by the ecliptic. It has no large stars but is noted for the fact that the planet Neptune was discovered in it upwards of 60 years ago.

(2). North of the celestial equator is located *Delphinus,* commonly known as Job's Coffin. It's principal stars are easily located in the sky.

(3). Due east from Lyra is *Cygnus,* The Swan, and is easily recognized by the cross

that marks it. The brightest star is *Deneb*, of the first magnitude. It is one of the large, remote bodies whose parallax has never been found.

(4). You will also find in this constellation 61 *Cygni,* noted by the fact that it was the first star to have its parallax determined. It is eight light years from the sun, nearly as far away as Sirius.

10. *October.* The objects in the sky for observation and study during September having passed on to the west, some new objects now meet our eyes. In October the sun is in Virgo, while the earth is in the opposite part of the heavens.

(1). *Aquarius,* the last of the zodiacal constellations contains no large stars; but a third magnitude star, known as *Skat,* a few degrees south of the ecliptic is near the source of a stream of meteors whose orbit the earth crosses July 27th to 29th.

(2). In Pisces Australis is found a conspicuous star, *Fomalhaut,* of the first magnitude. It is of a reddish color, and has a companion 30 seconds distant from it.

(3). North of the celestial equator is Pegasus, the Flying Horse, as the Greeks called it. The most striking outline is the "*Great*

Square of Pegasus," one of the stars of which is in Andromeda. It is really a trapezoid rather than a square.

(4). *Lacerta* is north of Pagasus. The constellation is small, but as it lies in the Milky Way it is a magnificent sight, especially with the glass. In this constellation is located the radiant point of a minor stream of meteors which is visible in August and September.

11. *November.* There are some beautiful objects for study during this month.

(1). South of Audromeda lies the constellation, *Pices.* This is the first constellation of the Zodiac. On account of the precession of the equinoxes, it occupies at present the sign of Aries. There are no conspicuous stars in this constellation.

(2). In the northern heavens is found *Cassiopeia,* "The Lady in the Chair." The stars composing the chair are easily found. This constellation lies on the opposite side of Polaris from the Dipper.

A noted temporary star made its appearance in this constellation in the year 1572, A. D. After careful observation, full description was given of it by Tycho Brahe. It

was once so bright that it could be easily seen in day time.

(3). Within a degree and a quarter of the north pole, you will find *Polaris.* This star will continue to approach the pole for nearly 200 years, at which time it will be only 26 minutes and 30 seconds distant. Polaris is 44 light years from the solar system. It has a companion of the tenth magnitude. While Polaris is a topaz yellow, its companion is pale white. The comparison is easily recognized in a three-inch telescope.

12. *December.* The annual excursion will soon be completed. Only 30 degrees more of the heavens to study, and we will be at the starting place last January.

(1). Perseus in the northern heavens contains a star of the second magnitude, *Algenib.* It is approaching the solar system at the rate of five and a half miles per second.

(2). About 9 degrees south and a little west of Algenib will be found *Algol,* a remarkable variable star.

(3). In the year 1901, there appeared in the constellation, Perseus, a remarkable temporary star, *Nova,* said to have been the most brilliant of the temporary stars for 300 years.

(4). South of the celestial equator in the constellation, Cetus, is situated a brilliant red star, *Mira*. It is the most remarkable variable which has yet been observed.

(5). The constellation Eridanus, The River, is situated east of Cetus. This constellation contains one star of the first magnitude, Achenar, but it is invisible from the 40th parallel of north latitude, being below the horizon in the southern heavens.

Conclusion. Our excursion is now completed. See what changes have taken place since we started! The whole heavens have seemed to revolve around our earth from east to west once during the year, but in reality the heavens did not revolve at all; it was really the motion of the earth around the sun which caused the changes in the appearance of the sky from month to month.

LESSON 5. FUEL FOR THE SUN.

"And there is nothing hid from the heat thereof." Psa. 19:6. *"For the sun is no sooner risen with a burning heat, but it withereth the grass, and the flower thereof falleth."* Jas. 1:11.

The great orb of day is the most magnificent of all the beautiful objects in the sky, to the inhabitants of the earth. Notwithstanding we see him every day, nothing in nature is more awe-inspiring.

He is called in Gen. 1:14-16, the "greater light to rule the day." He is therefore the source of both light and heat. The common Hebrew name for sun is *shemesh,* and many references are made to him in the scriptures.

It may not seem strange that the sun was an object of worship by some of the nations contemporary with the Hebrews. This was especially true of the Phoenicians who worshipped him under the name of Baal; the Assyrians worshipped him under the name of Shamash, and the Egyptians, under the name of Ra. While the Hebrew were warned against all such heathenism (Deut. 17:3), yet sun worship was practiced among them. 2 Kings 21:5. The good king, Josiah, abolished these evil practices which were commenced during the Assyrian period. 2 Kings 23:5-11.

"There is nothing hid from the HEAT thereof." The *source* of the sun's heat has been a great mystery to the scientist. He

has been constantly pouring his beams of heat upon the earth for ages—it may have been for millions of years—, and yet from century to century there has seemed to be no decrease in his energy. Remember also that this constant radiation of heat is in all directions from the sun as a center. Whence then, the *source* of the heat and light of the sun? What feeds this great central fire?

(1). A constant downpour of meteoric matter on the body of the sun has been proposed as the solution, but this certainly seems to be inadequate.

(2). The theory that the *"sun is slowly shrinking under its own central gravity,"* says Prof. Young in his "Manual of Astronomy," page 569-570, *"is the only rational explanation of the facts thus far presented."* In this connection, he says. *"A shrinkage of* 300 *feet a year in the sun's diameter will account for the whole annual output of radiant heat and light."*

Now if this shrinkage continues long enough, the sun will, in future ages, cease to give sufficient light and heat to support life upon the earth, at which time the sun will become dark and frigid.

Let us do a little calculating here, and see what will be the result. The diameter of the sun is 866,000 miles. A shrinkage in its diameter of 300 feet a year will account for the whole annual output of radiant heat and light. At this rate, its diameter will decrease one mile in about seventeen years. At the same rate, in 17,000 years, it will have decreased 1000 miles in its diameter. Now this 1000 miles subtracted from its diameter will still leave 865,000 miles, and this is so near what it was before, that if you should live 17,000 years, you could see no perceptible change in its size, light or heat. And at this same rate of 1000 miles decrease in its diameter every 17,000 years, it will take a little over seven million years for the sun to decrease to one-half of its present diameter. Its face will then appear only about one-fourth of present size.

LESSON 6. DARK SUNS.

"I will cover the heavens, and make the stars thereof dark; I will cover the sun with a cloud, and the moon shall not give her light. All the bright lights of heaven will I make dark over thee, and set darkness

upon thy land, saith the LORD GOD," Ezek. 32:7-8.

"*The sun and the moon shall be darkened, and the stars shall withdraw their shining.*" Joel 3:15.

While the above language is doubtless figurative, yet it seems literally true that there are now many dark bodies in the universe—stars as well as planets which have ceased, in the course of ages, to shine. Astronomical research of the past fifty years has proved this to be true.

We saw in the previous lesson, that in the course of time, the sun will become dark and cold, and life upon the planets will no longer be possible; or in the language of Carl Snyder, "our system will be simply a series of revolving icicles."

There is no longer and doubt that there are many of those dark bodies suspended in space, bodies whose lights long ago went out. Many believe that the universe is full of dark suns. Is it too much to believe with Arrhenius that the number of these opaque bodies far exceeds the number of those that blaze?

There seem to be three stages: The Nebular period, the star period, and the dark

THE NEW MOON.



Behold, tomorrow is the new moon."—1 Sam. xx. 5.

URSA MAJOR, OR THE DIPPER.



The two right-hand stars, ALPHA and BETA, point nearly to POLARIS. The star, MIZAR at the bend in the handle, has a small companion near by, ALCOR

sun period; and the reasoning seems to be good, that in course of time all the suns now lighting the heavens will one day cease to shine. It is believed that the solar system was once in a nebulous condition; and we know that, at least, some of the planets are now in the dark stage, at which the sun himself will finally arrive in future ages.

But what evidence have we of the existence of dark suns?

(1). *Variable Stars.* These are the bodies that have periodic changes of brilliancy, and of those, there are several types. *Algol*, in the constellation of Perseus, is a remarkable variable, and it seems evident that it has a dark companion. This star remains bright for most of the time; but at times it suddenly decreases in brilliancy for about four hours, then it rekindles and in about five hours is again as brilliant as ever. The following is from Prof. Young's Manual of Astronomy, p. 531: "As to stars of the Algol type, the most natural explanation suggested by Goodricke more than a century ago, is, that the obscuration is *an eclipse* produced by the periodical interposition of some opaque body between us and the star."

Prof. Young also says that there are about forty stars of the Algol type.

(2). *Binary Stars.* These are the double stars which are physically connected, and they revolve in elliptical orbits around their common center of gravity. Prof. Young says that in the case of a binary pair the *apparent* orbit of the smaller star with reference to the larger one is always an eclipse. Explaining the orbit of Sirius which has been found to have a dark companion, he says: "Before 1850 Bessel, from Meridian-circle observations, had found it to be moving, for no (then) assignable reason, in a small oval orbit with a period of about fifty years. In 1862 Clark found near it a minute companion, which explained everything; it was the first discovery of one of Bessel's "*dark suns.*"

In concluding this lesson, please read and ponder the following from "Steele's Popular Astronomy," page 256: "The process of apparent creation and destruction seems to be going on in the heavens immediately before the eye of the astronomer, though usually with inconceivable slowness. New stars flash light, old stars are lost, worlds burst into flame, and their glowing embers fade into darkness. Are they re--

created into new worlds? We know not. We only perceive that the same Almighty power which fitted up this earth for our home is yet at work among the worlds about us, and we are thus witnesses of His eternal presence."

LESSON 7. THE DIVINE ADMONITION.

"Look unto the heavens and see; and behold the clouds which are higher than thou." Job 35:5.

"Look now toward heaven, and tell the stars if thou be able to number them." Gen. 15:5.

The great majority of people seldom look up. The eye is fixed on terra firma—its beauties, its flowers, its pearls and its riches.

The Duke of Alva once being asked if he had observed a recent eclipse of the sun, replied: "No, I have no time to look up to heaven." Being largely engaged in earthly things, the great masses never see, nor meditate upon, the magnificent objects in the sky. *"Look* unto the *heavens* and *see."* What a field for observation thought and meditation!

While the beauties and fascinations of earth are many, yet it would astonish the average beholder to know what great numbers and varieties of magnificent objects there are in the starry heavens,—some of them visible to the naked eye, but a million times more of them come to view by the aid of the telescope.

The strongest and most penetrating eye, unaided, can probably see 6,000 stars in the whole heavens; but it is no exaggeration to say that the number brought to view through the aid of the most powerful telescope will reach into the millions. Then think of the fact that there are probably as many *dark suns* in space as there are shining ones, and we begin to have some conception of the magnitude of the known portion of the universe.

1. To us the most magnificent object in the sky is the *sun,* then our *moon,* followed by *Venus* and *Jupiter* when at their best.

2. By careful observation, any one can soon locate the twenty stars of the first magnitude. But a few of these can not be seen in our northern latitudes. They are as follows:

(1). *Sirius* in the constellation of Canis Major.

(2). *Canopus* in Argo Navis.
(3). *Achernar* in Eridanus.
(4). *Capella* in Auriga.
(5). *Rigel* in Orion.
(6). *Procyon* in Canis Minor.
(7). *Arcturus* in Bootes.
(8). *Alpha* in Centaurus.
(9). *Vega* in Lyra.
(10). *Aldeberan* in Taurus.
(11). *Betelgeuse* in Orion.
(12). *Pollux* in Gemini.
(13.) *Regulus* in Leo.
(14). *Alpha* in Crux.
(15). *Spica* in Virgo.
(16). *Beta* in Centaurus.
(17). *Antares* in Scorpio.
(18). *Altair* in Aquila.
(19). *Deneb* in Cygnus.
(20). *Fomalhaut* in Pisces Australis.

If you will secure "Upton's Star Atlas," or any good map of the heavens, you can the more easily locate the above.

3. Other beautiful objects in the sky are the *Star Clusters* and *Nebulae*. Look up the following, using a good star atlas:

(1). The *Pleiades* in Taurus.

(2). *Praesepe*, or the Bee Hive in Cancer. It is visible to the naked eye, but through a 3-inch telescope it is a beautiful object.

(3). The *Great Nebula* in Andromeda. The naked eye can see this plainly, and it is the brightest Nebula in the sky.

(4). The *Crab Nebula* in Taurus is so named because it had the appearance of a crab when first seen (1758) in Lord Ross' great reflecting telescope.

(5). The *Great Nebula* in Orion. It is generally agreed that this must be regarded as the grandest and most interesting of all the Nebulae. It surrounds the star *Theta* in Orion, which is visible to the naked eye as a single star, and in the telescope it forms the group of four principal stars and two not so bright, making six in all, and known as the *trapezium*. This Nebula is one of the largest in the heavens.

(6). The *Nebula* around *Eta* in Argus. This occupies a region in the southern heavens containing many stars forming an immense cluster involved in Nebulous matter. This star Eta was once very brilliant, exceeded only by Sirius; but it is now a star of the seventh magnitude.

(7). The *Great Spiral Nebula* in Canes Venatici was so named by Lord Ross, who saw it in his great telescope, six feet in diameter.

(8). The *Trifid Nebula* in Sagittarius. It is very close to the ecliptic, and there is evidence that the Nebula has moved from its former position.

(9). The *Great Cluster* in Hercules, as it is often called, is perhaps the most magnificent visible in the northern heavens. There appear to be faint stars densely packed.

(10). In Lyra is found what is known as the *Ring Nebula,* which is a wonderful looking object.

(11). In Monoceros is found a *Great Nebula* of enormous size, covering an area more than a degree in diameter. It appears to be a chaos in the earlier stages of evolution.

(12). The *Cluster* known as "13 *Messier*" in Hercules, not far from the "Apex of the Sun's way," is the finest in the northern heavens, and in a space one fourth of the diameter of the moon it contains several thousand stars.

4. Besides the foregoing, there are other magnificent objects which appear from time to time, known as *Comets,* a few of which will be noticed in this connection. The study of the comets is the most fascinating, per-

haps, of any of the beautiful objects in the heavens.

(1). The *Great Comet* of 1811 was one of the most celebrated; and was indeed a magnificent spectacle. The head of this comet was 112,000 miles in diameter, and its orbit is so vast that its greatest distance from the sun is fourteen times the distance of Neptine. Astronomers have calculated that it will return in 3000 years!

(2). *Halley's Comet* which appeared last in 1835, is noted as being the first whose period of revolution was satisfactorily established. Its period is about 75 years, and it is expected again in 1910. It is recorded as having come in seeing distance from the earth no less than 25 times, beginning with the year B. C. 11. It was Halley's comet which shone over Europe in April 1066, and was considered the forerunner of the conquest of England by William of Normandy.

(3). The *Comet* of 1843 was so very brilliant that it could be seen in the full light of day; and at perihelion it approached so near the sun that it almost grazed its surface.

(4). *Donati's Comet* which appeared in 1858 was a subject of universal wonder. Its

tail was 50,000,000 miles in length, and its head was 250,000 miles in diameter. It passed over the 1st magnitude star, Arcturus, Oct. 5, 1858, and came nearest the earth on October 10 of the same year. It remained visible for more than nine months, and will not appear again for nearly 2,000 years.

(5). Another great comet appeared in 1882, and its tail was over 60,000,000 miles in length. Its greatest distance out from the sun is six times that of Neptune, or about 16,800,000,000 miles. It will not appear again for over 800 years.

Since the year 1882 four or five comets have appeared that could be seen without a telescope, but only one was brilliant enough to attract general attention,—Rordame's comet of 1893.

We may look forward with much anticipation and certainity of seeing Halley's comet in 1910, as it is due to appear again about that time.

LESSON 8. THE LITTLE THINGS OF THE UNIVERSE, AND THE BIG THINGS.

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"The mountains shall bring peace to the people, and the little hills, by righteousness." Psa. 72:3.

There are little hills and big hills, and hills are compared with mountains. The whole universe of big things is made up of exceedingly small particles, called atoms. These are too small to be seen with the naked eye.

The study of bacteria practically began with the use of the microscope. The microscope is a wonder-revealer of modern times. Biology teaches that a *Bacillus* is a genus or class of Bacteria, the smallest living organism we know of, and it is the smallest thing the human eye has ever seen. The eye can not possibly see one of these living things without the aid of a powerful microscope. It is said that it would take 280,000,000,000 of these little living things to weigh one pound. Let us guess that a flea will weigh one grain, and we will not miss it very far. Now, 7,000 grains avoirdupois equal one pound. Then it will take 7,000 fleas to weigh one pound. Associating these figures and dividing, we find that it

will take 40,000,000 of these little living bacteria to equal in weight a flea. Now compare the flea to a mouse; one is small and the other is large. Then think of a mouse and an elephant standing side by side; the one is a little thing, the other is of enormous size. Place the elephant by the side of *Pike's Peak,* and what a comparison! Now think of Pike's Peak as compared with the whole Rocky Mountain system, and the Peak dwindles into insignificance. Finally, if you can, compare the Rocky Mountain system with the whole earth—land and water—continents, islands, oceans and seas! Now you say, we are at the end, let us stop. You look at the sun, then at the moon, then at the thousands of little bright points in the sky, and finally you look at the earth, and you say: Surely, this world is the biggest thing in the universe, and the whole heavens are revolving around it as a common center.

No we must not stop here. Let us go on with the comparison. Compare the *earth* with *Jupiter.* In imagination, place one earth upon a level plain, and another by it. Then another and another until you have eleven earths all standing in a row. These eleven earths would reach across the diame-

ter of Jupiter. In other words, if Jupiter were a shell, it could swallow nearly 1,400 earths.

Let us next compare *Jupiter* with our *sun.* Put Jupiter on a level plain, and another by it. Then another and another until we have ten Jupiters all in a row. These ten Jupiters will reach across the diamter of the sun. In other words, the sun could swallow 1,000 Jupiters.

Next, if you can, imagine 100 suns melted into one, and we have a *Sirius,* the brightest and most magnificent star in the heavens.

Now reflect on the fact that it takes 300 *Siriuses* to make one *Arcturus,* and not less than 300 *Arcturuses* to make one *Canopus,* and you will begin to have some conception of what is meant by *bigness!*

Canopus is one of the biggest things in the universe known to astronomers, and it is estimated that Canopus is equal in bulk to a million of our suns. No parallax of great Canopus has ever yet been found, and this fact means that its distance is unthinkable, and its dimensions enormous. The same can be said of *Rigel,* and of *Deneb* in the constellation of the *Swan.*

LESSON 9. THE WONDERS OF NATURE PROGRESSIVE.

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"And I will show wonders in the heavens and in the earth, blood, and fire, and pillars of smoke. The sun shall be turned into darkness, and the moon into blood, before the great and terrible day of the LORD *come."* Joel 2:30-31.

"He delivereth and rescueth, and he worketh signs and wonders in heaven and in earth, who hath delivered Daniel from the power of the lions." Dan. 6:27.

"Who doeth great things past finding out; yea, and wonders without number." Job 9:10.

"Stand still, and consider the wondrous works of God. Dost thou know when GOD *disposed them, and caused the light of his cloud to shine? Dost thou know the balancing of the clouds, the wondrous works of him who is perfect in knowledge?"* Job 37: 14-16.

While the terms "WONDERS," and "SIGNS," and "WONDROUS WORKS," generally mean the supernatural or miraculous acts of the Almighty, yet it is literally true that Jehovah is now doing wonders, and ac-

complishing marvelous things in the heavens and the earth through natural law.

(1). SUPERNATURAL WONDERS. While volumes could be written concerning the mighty acts of God, his marvelous interventions and miraculous workings in behalf of his people, we will notice only a few instances at this time.

(a). *The standing still of the sun and moon.*

On the death of Moses, Joshua became the leader of Israel (Josh. 1:1-9). After leading the people of God across the Jordan, Joshua took Jericho, Achan was stoned, and the Gibeonites made a league with Joshua. Then five kings came against Joshua in battle, Josh. 10:1-7, and the "Lord cast down great stones from heaven upon them." Josh. 10:11. After that, occurred the mighty supernatural work of God in causing the sun and moon to stand still.

"Then spake Joshua to the Lord in the day when the Lord delivered up the Amorites before the children of Israel, sun, stand thou still upon Gibeon; and thou, moon, in the Valley of Ajalon. And the sun stood still, and the moon stayed, until the people had avenged themselves upon their enemies. Is this not written in the book of

Jasher? So the sun stood still in the midst of heaven, and hasted not to go down about a whole day. And there was no day like that before it or after it, that the Lord hearkened unto the voice of man; for the Lord fought for Israel." Josh. 10: 12-14.

(b). *The darkening of the Sun at the Crucifixion.*

"And it was about the sixth hour, and there was a darkness over all the earth until the ninth hour. And the sun was darkened, and the vail of the temple was rent in the midst." Luke 23:44-45.

The above are sufficient to show the mighty miraculous interventions of Jehovah on special occasions.

(2). The Wondrous Workings of Natural Law. In the development of the universe, and in the accomplishment of his purposes, the Creator has been, and is yet, performing marvelous things in the heavens above. In the language of Job 9:10, "He doeth wonders without number."

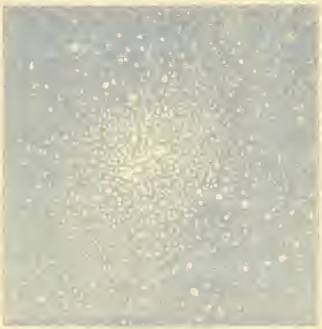
The Original Chaos, (Gen. 1:1). After the original material was brought into existence by the Creator, out of which he afterwards built the universe, all was confusion and disorder—*chaos.* "*And the earth was without form and void; and dark-*

ness was upon the face of the deep." Gen. 1:2. Then *Elohim* spent ages of time in *bringing beauty and harmony out of the* original confusion; but he *finished* his work *and pronounced it very good.* Gen. 1:31; 2:1.

Since then, it seems that changes have been constantly going on in the heavens. Some stars are known to be changing in brightness. Take *Castor* and *Pollux* in Gemini as examples. Three hundred years ago, Castor was the brighter of the two, but now, it is inferior to Pollux in luminosity. The same is true of the star *Beta* in Libra, as compared with *Antares* which is not far distant. There are numbers of such cases, when we take the whole heavens into consideration.

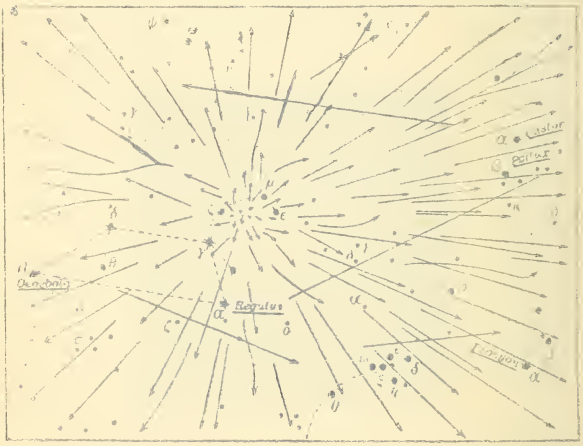
It appears evident that some stars have disappeared from the heavens, and some new ones have come into existence. The disappearance of a star does not mean that it is *annihilated,* but that it has become opaque and, therefore, has ceased to shine. It is probable that all the stars we now see shining in the heavens will one day go out. The *new ones* which come into existence are not new *creations.* They may have originated from nebulous matter. The heavens

A STAR CLUSTER



The Great Star Cluster in Hercules in Right Ascension 16 hours, 36 minutes, and Polar Distance 54° 4′ Northern.

THE LEONIDS, A METEORIC SHOWER



The radiant point of this stream is just north of REGULUS, a first magnitude star in LEO. It is near the 10th hour of right Ascension. The great shower of 1833 radiated from this point

seem to be teeming with *Nebulae,* which are white cloud-like patches of matter in space. Herschell discovered many of these objects in the sky—hundreds of them—with the aid of his great reflector; and it is estimated that there are not less than 120,000 of them in the heavens. It is believed that these are *star germs,* the material out of which stars or suns, or systems are formed. This being true, each of these 120,000 patches of nebulous matter will in future ages develop into a star or sun.

It may be that the collision or the rushing together of two great bodies originates nebula, and this nebula in turn becomes the *germ* of a future sun, or system. It is believed that our own solar system was once in a nebulous state.

Thus it seems that GOD is performing *wonderful things* right before our eyes; and by the use of the telescope and the spectroscope we are enabled to get some conception of the greatness of his power and majesty.

When we think of the vast amount of heat radiated from our great luminary, as well as that of all the stars, we look upon the greater portion of it as being lost, as it would seem that only a small per cent of it finds a resting place; yet it may be that a

large part of this heat is absorbed by the various nebulae in the heavens. Thus the Creator may be storing up the energy for future use, which seems to us lost

So far as our earth is concerned, God is doing wonderful things every day in our presence. We look with awe and astonishment at the wonders of the earthquake, the wonders of the tidal wave, the wonders of natural forces, the wonders of the electric current, the wonders of magnetism, the wonders of wind and cyclones, the wonders of solar attraction and solar energy.

LESSON 10. THE BIBLE AND ASTRONOMY.

"The heavens declare the glory of GOD, *and the firmament showeth his handiwork."* Psa. 19:1.

The subject of astronomy is referred to many times in the scriptures, showing that the inspired writers meditated much upon the beauties of the heavens; but it never developed into a real science among the ancient Israelites. It seems that they never made any distinction between comets, planets and fixed stars.

As a science, the cradle of astronomy is to be found in Asia. Probably the astron-

omical knowledge of the Chinese and the people of India goes farther back than that of any other nation. The Chaldeans made it a special study, and they are accounted to have excelled in their knowledge of astronomy.

At a very early period in history, the the Egyptians had considerable acquaintance with the science of astronomy. From Herodotus we learn that they determined very nearly, the length of the year. Astronomy traveled in a westerly direction from the remote east, and the Greeks learned it from the Egyptians.

In studying the subject of astronomy in the Hebrew scriptures, we find their knowledge of the subject thoroughly imbued with a religious character; and it is impossible to find in any other writings, even to the present day, so much pure and elevated piety in connection with observations on the starry heavens, as is found even in single books of the Bible. (See Hos 5:8; Psa. 19; Job 26.)

The Hebrew *Shemesh* is the usual word for *Sun* in the Old Testament, and in Gen. 1:16 he is called the "greater light," and is to serve in conjunction with the moon, "to

rule the day." See also Psa. 136:8; Jer. 31:35.

During patriarchal times the minds of pious men and women were attracted and enraptured by the magnificence of the heavens. Gen. 37:9. After the law was given the appearance of the new moon was saluted by the sound of trumpets, and celebrated with sacrificial feasts. See Nnm. 10:10; 28:11-15; 29:1.

In Psa. 19:6 reference is made to the ecliptic. "His going forth is from the end of the heaven, and his *circuit* unto the ends thereof." The Sun makes a complete circuit of the whole heavens every 24 hours; he also makes his annual round among the constellations of the Zodiac every 365 days.

In those early times it is not strange that the Hebrews were led to worship so magnificent an object as the sun, although they were expressly forbidden to do so. The Assyrians, Phoenicians and Egyptians did the same thing. But strange as it may seem to us now, the Parsees actually worship the sun to this day.

As early as the days of Job, the *Constellations* were distinguished one from another, and designated by peculiar and appropriate names. "He is wise in heart and mighty in

strength, * * *. Who alone spreadeth out the heavens, and treadeth upon the waves of the sea. Who maketh Arcturus, Orion, and Pleiades, and the Chambers of the South." He not only mentions by name three most beautiful Constellations in the northern heavens, but by the term, *"Chambers of the South,"* he seems to refer to the Southern Constellations, or those which surround the south pole of the heavens.

"Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion? Canst thou bring forth Mazzaroth in his season? Or canst thou guide Arcturus with his sons?" By "Arcturus" is meant *Ursa Major,* or the *Great Bear,* one of the most beautiful constellations in the northern sky. The marginal reading in the common version for "Mazzaroth" is "the twelve signs."

We also find the following in scripture:

(1). *Heyel,* "Lucifer," the morning star, which was the planet *Venus.* "How art thou fallen from heaven, O Lucifer, son of the morning!" Isa. 14:12. In the above passage, the term is used in a figurative sense, referring to the fall of the King of Babylon.

(2). *Nachash,* "The Crooked Serpent," the constellation *Draco,* between Ursa Ma-

jor and Ursa Minor, and which spreads itself in windings across the heavens. "By his spirit he hath garnished the heavens; his hand hath formed the crooked serpent." Job. 26:13.

(3). Dioskouroi, Gemini or the Twins, a Constellation on the belt of the Zodiac. The twin stars were Castor and Pollux. "And after three months we departed in a ship of Alexandria, which had wintered in the isle, whose sign was Castor and Pollux," Acts 28:11. These two stars are easily located in the heavens, just north of the ecliptic, between the 7th and 8th hours of Right Ascension, and nearly due north of *Procyon*. The "Bee Hive," a beautiful cluster in Cancer and nearly on the ecliptic, is about 12 degrees southeast of Pollux.

(4). *Tsaba hashamayim,* "the host of heaven." "And he (King Josiah) put down the idolatrous priests, whom the kings of Judah had ordained to burn incense in the high places in the cities of Judah, and in the places round about Jerusalem; them also that burned incense unto Baal, to the sun, and to the moon, and to the planets, and to all the *host of heaven.*" 2 Kings 23:5.

A small per cent of the scripture references has been given, but these are sufficient

to show you what Jehovah has seen fit to say on the subject of Astronomy.

LESSON 11. THE IMMENSITY OF SPACE AND THE ENORMITY OF STAR DISTANCES.

"Is not God in the height of heaven? and behold the height of the stars, how high they are." Job 22:12.

"For as the heaven is high above the earth, so great is his mercy toward them that fear him. As far as the east is from the west, so far hath he removed our transgressions from us." Psa. 103:11-12.

When we take up a subject like this we are lost in wonder and amazement trying to grasp the meaning of the extent of space and the immensity of the distance to the fixed stars. But we can not do it. The distance is inconceivable.

No one except the Creator knows the extent of the universe, the entire bounds of creation, the limits of space. It is generally believed by astronomers that the sidereal system extends far beyond the range of the most powerful telescope, but how much farther, no one knows.

A strong, penetrating eye, unaided, can see something like 6,000 stars in the whole

heavens. The faintest of these are stars of about the 6th magnitude. Only a few of the members of our solar system can be seen with the naked eye,—the Sun, the Moon, Mercury, Venus, Mars, Jupiter, Saturn, and under favorable circumstances, Uranus; but Neptune and the 500 Asteroids are invisible to the naked eye, as are also the satellites of the various planets.

About 300 years ago, Galileo perfected and used the first telescope. It was a crude thing, indeed. The first one had only a three-fold magnifying power; and finally he made one with a power of thirty-two. He made wonderful discoveries with this instrument. He discovered the four larger moons of Jupiter, the rings of Saturn, the mountains of our moon, and looked into space millions of miles beyond the reach of the human eye.

Sir Wm. Herschel calculated that his twenty-foot reflector revealed the existence of stars 900 times the distance of Sirius. Such stars, therefore, would be 7,500 light years distant. But Herschel also constructed a forty-foot reflector with a diameter of 48 inches, and he calculated that it would penetrate 2800 times the distance of Sirius, which is over 23,000 light years from us!

Herschel's reflector reached stars down to the 17th magnitude, and it has been estimated that his reflector brought into view not less than 100,000,000 of stars! Just think of *a portion* of our stellar universe containing a hundred million suns!

You may ask, what is meant by the term *light year?* It is the distance traveled by a ray of light in a year. As light travels through space at the rate of 186,300 miles per second, this amounts to nearly six trillions of miles.

In order that we may get some idea of the meaning of distance as applied to the stars, let us do a little calculating. The astronomical unit for expressing celestial distances is 93,000,000 miles, which is the earth's distance from the sun. This distance is so great that it would take a wave of light eight and one-third minutes to come from the sun to us. It would take an express train, running at 60 miles an hour, 176 years to make the journey to the sun.

The nearest star to the solar system known to astronomers, is Alpha, in the constellation of Centaur. This star is 277,000 times our distance to the sun. This distance is so great that it would take a wave of light

four and a half years to come from the star to us.

Sirius is about eight and a half light years from our system, and that means that it is about 50 trillions of miles away! The spectroscope reveals the fact that Sirius is coming toward the solar system at the rate of ten miles a second. Suppose it continues to come in this direction at that rate, how long will it take to reach the solar system? A little calculation by long division will reveal the fact that it will take Sirius over 150,000 years to reach our system.

Procyon is ten and a half light years from us. The Star *Altair* is thirteen and three-fifth light years away. *Vega* is twenty-one and seven-tenths light years distant, while *Capella* is thirty-two. *Polaris* is so far away that it would take a wave of light forty-four years to span the distance, and *Arcturus* is probably 120 light years away. These are all *moderate distances.* Now, remembering what we said a little while ago, that Herschel's forty-foot reflector probably reached stars 23,000 light years distant, you begin to have some conception of the vast extent of the great universe of God.

LESSON 12. THE END.

"And all the host of heaven shall be dissolved, and the heavens shall be rolled together as a scroll; and all their host shall fall down, as the leaf falleth off from the vine, and as a falling fig from the fig-tree." Isa. 34:4.

"Of old hast thou laid the foundation of the earth; and the heavens are the work of thy hands. They shall perish, but thou shalt endure. Yea, all of them shall wax old like a garment; as a vesture shalt thou change them, and they shall be changed." Psa. 102:25-26.

"Then cometh the end," 1 Cor. 15:24.

There is coming an end of the present order of material things. Nothing is more clearly taught than this. Both nature and revelation bear testimony in unmistakable terms, that the universe as it now is will not continue forever. The fact is, the student sees *change* written on the very face of the sky. The present existence of dark suns and the sudden blazing out of new stars in the heavens prove this. The visible universe is not now what it was a thousand years ago; and it will not be a thousand years hence exactly what it is now.

Much speculation has been going on relative to the process by which the present condition of things has come about; and men will speculate on the process by which it will end. But we may confidently say, in the midst of all the speculations of men, *that there is coming an end.*

Please read the following quotation from *Prof. Young's Manual of Astronomy,* pages 571-572: One lesson seems to be clearly taught: that the present system of stars and worlds is not an *eternal* one. We have before us everywhere evidence of continuous, irreversible progress from a definite beginning toward a definite end. Scattered particles and masses are gathering together and condensing, so that the great grow continually larger by capturing and absorbing the smaller. And yet, on the other hand, the phenomena of the coronal streamers, of comets' tails, and those presented by the swiftly expanding nebulosity of Nova Persei, seem to indicate in certain cases a process exactly the reverse,—a repulsion and dissipation in space of finer grained materials, possibly the 'ions' of the most modern physicists.

"At the same time the hot bodies are losing their heat and distributing it to the

colder ones, so that there is an unremitting tendency towards a uniform, and therefore *useless,* temperature throughout our whole universe; for heat is available as energy (i. e., it can do work) only when it can pass from a warmer body to a colder one. The continual warming up of cooler bodies at the expense of the hotter ones always means a loss, therefore, not of energy, for that is indistructible, but of *available* energy.

"To use the ordinary technical term, energy is continually 'dissipated' by the processes which constitute and maintain life on the universe. This 'dissipation' of energy can have but one ultimate result, that of absolute stagnation when the temperature has become everywhere the same.

"If we carry our imagination backward, we reach 'a beginning of things,' which has no intelligible antecedent; if forward, we come to an end of things in dead stagnation. That in some way this end of things will result in a 'new heavens and a new earth' is, of course, very probable, but science as yet presents no explanation of the method."

The intelligent student of both nature and revelation may affirm with confidence that *destruction* or *change* awaits the visible universe. What is to be the character

of this destruction? What is to be the final destiny of the earth and the heavens? The language of Divine revelation is not ambiguous on this subject, but it is clear, positive and emphatic.

"Heaven and earth shall pass away, but my word shall not pass away." Math. 24:35.

"But the heavens and the earth, which are now, by the same word are kept in store, reserved unto fire against the day of judgment and perdition of ungodly men." 2 Pet. 3:7.

"But the day of the Lord will come as a thief in the night; in the which the heavens shall pass away with a great noise, and the elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up." 2 Pet. 3:10.

The earth was once destroyed by water, but from the above scripture it is evident that fire is to be the agent of its *future destruction.*

But we may also look with confidence for God's promised "new heavens and new earth."

"For, behold, I create new heavens and a new earth; and the former shall not be remembered, nor come into mind." Isa. 65: 17.

"Nevertheless we according to his promise, look for new heavens and a new earth, wherein dwelleth righteousness." 2 Pet. 3: 13.

"And I saw a new heaven and a new earth; for the first heaven and the first earth were passed away; and there was no more sea." Rev. 21:1.



PART TWO.

OUTLINE STUDIES IN ASTRONOMY

Lesson 1. The Sun.

1. *The Central Orb of the Solar System.*

(1). Our source of light and heat.

(2). Has a family of over 500 members, including planets, satellites and asteroids.

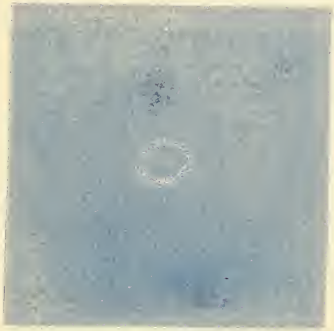
(3). Besides those, a large number of comets and meteors cicrle around him.

(4). His attraction holds the planets in place.

(5). To us the most magnificent object in the sky.

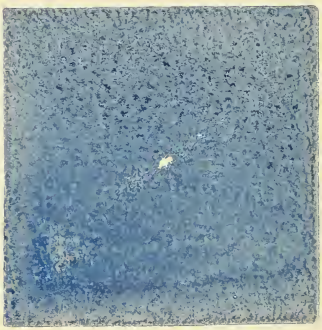
(6). A hot self-luminous body, contracting in size.

RING NEBULA IN LYRA.



This is one of the brightest of the Circular Nebulæ and is located about 20 degrees south east of the star Vega.

THE GREAT NEBULA IN ANDROMEDA .



This is one of the brightest Nebula in the sky that can be seen with the naked eye on a dark night. It has a nucleus and dark streaks.

(7). Heat and light spread in all directions.

2. *His Distance.*

(1). Mean distance from earth is 93,000,000 miles.

(2). His light comes to us in eight and one-third minutes.

(3). Distance to nearest fixed star (Alpha Centauri) is 25 trillion miles.

(4). Distance from Sirius eight and a half light years.

(5). Distance from Polaris forty-four light years.

3. *His Enormous Dimensions.*

(1). A row of 109 earths placed side by side would reach across his diameter, 866,000 miles.

(2). If the sun were an empty shell, he could swallow a million and three hundred thousand earths.

(3). He is not so dense as the earth, but it would take 332,000 earths to equal the weight of the sun.

(4). A body on the sun's surface would weigh 27 times as much as it does on the earth's surface.

4. *The Sun in Motion.*

(1). He makes the circuit around the heavens every 24 hours—apparent motion.

(2). Makes a complete circuit among the stars once in 365 days—apparent motion.

(3). He travels south in winter and north in summer—apparent motion.

(4). Turns completely around on his axis every 25 days, 7 hours and 48 minutes —real motion.

(5). Is sweeping through space with his family of planets at the rate of 11 miles a second—real motion.

5. *Physical Constitution.*

(1). Its visible surface is called the photosphere.

(2). Sun-spots are probably shallow depressions in the photosphere.

(3). As to the cause of sun-spots, we have no certain knowledge; but they are probably the results of eruptions.

(4). The relation of sun-spots to magnetic disturbances upon the earth is an interesting study.

(5). The Chromosphere, composed of luminous gas, mostly hydrogen, is outside the photosphere.

(6). The Corona is a halo or glory of light which surrounds the sun when in a total eclipse, and is probably the most impressive of all natural phenomena.

(7). Thirty-six elements are known to exist in the sun, such as: calcium, iron, aluminum, potassium, etc.

(8). It would require 600,000 full moons to give as much light as cloudless sunshine.

(9). The sun is contracting. A shrinkage of 300 feet in his diameter annually is necessary to account for the light and heat which we receive from him.

Lesson 2. Mercury.

1. *The study of the planets.* Mercury is the first in order of distance from the sun.

(1). Recorded observations run back as far as B. C. 264.

(2). Called by the Greeks Apollo when morning star, and Mercury when evening star.

(3). There are but few opportunities of seeing it with the naked eye, on account of its nearness to the sun.

2. *Motion and Distance.*

(1). It circles around the sun at a mean distance of 36,000,000 miles.

(2). It completes a revolution every 88 days.

(3). Sometimes it comes as close as 50,000,000 miles to the earth.

(4). Its average rate in its orbit is 30 miles a second. This is the most rapid of all the planets. The law is, the nearer the body is to the sun the swifter is its velocity.

(5). The inclination of its orbit to the ecliptic is seven degrees.

3. *Dimensions and Mass.*

(1). It is about 3,000 miles in diameter.

(2). Its surface is about one-seveth that that of the earth.

(3). The smallest of the planets except the asteroids.

(4). It would take about 20 Mercuries to make one earth.

(5). A body on its surface would weigh about one-third of what it does on the earth.

4. *As Seen Through the Telescope.*

(1). It looks like a little moon, showing phases precisely similar to those of the moon.

(2). It appears as a half moon when at greatest elongation.

(3). These phases prove that Mercury is spherical and reflects the light of the sun.

(4). It probably has *little* or no atmosphere, and seems to turn on its axis once while going around the sun.

5. *Light and Heat.*

(1). Its average light and heat is seven times what it is on the earth, and that temperature is sufficient to turn water into steam.

(2). It has no satellite, but the sun appears three times as broad there as it does to us.

(3). Its Albedo, or the reflecting power of its surface is only 0.13.

Lesson 3. Venus.

1. *Next to Mercury* in distance from the sun is Venus, the most magnificent of all the planets when at its best.

(1.) By the ancients it was called Phosphorus, "Lucifer," (Isa. 14:12), or morning star, and Hesperus or evening.

(2). It presents the same phases as Mercury.

(3). Its light and heat are double that of the earth.

(4). When most brilliant Venus casts a shadow at night.

2. *Motion and Distance.*

(1). Venus revolves around the sun at a mean distance of 67,000,000 miles.

(2). Its orbit is very nearly circular.

(3). Makes a complete revolution around its primary in 225 days.

(4). Its nearest approach to the earth is about 25,000,000 miles.

(5). Its average rate per second is 22 miles.

(6). It appears to turn on its axis once while going around the sun.

3. *Dimensions and Mass.*

(1). Its diameter is about 7,600 miles.

(2). Has about nine-tenths as much surface as the earth, and about seven-eights as much volume.

(3). A body weighing 8 pounds on the earth would weigh about 7 pounds on Venus.

4. *Other things of interest about Venus.*

(1). Its reflecting power is 0.50, which is nearly four times that of Mercury.

(2). There are evidences of an atmosphere on the planet, and some have argued its habitability.

(3). So far as is known it has no satellites.

(4). When Venus passes between the earth and sun, it is called a "transit." These do not occur very often. The next transits will be June 8, 2004, and June 6, 2012.

Lesson 4. The Earth.

1. *The earth* also hangs in space (Job. 26:7), and must be studied astronomically.

(1). The earth is third in distance from the sun.

(2). It is referred to many times in scriptures, and its destiny is foretold. Pet. 3:7, 10.

2. *Motions and Distance.*

(1). Its mean distance from the sun is 93,000,000 miles.

(2). It turns on its axis once every 24 hours.

(3). The diurnal rotation of the earth is the cause of the apparent motion of the sun and stars around the earth every 24 hours.

(4). The annual revolution of the earth about the sun causes: (a). The seasons; (b). The apparent motion of the sun north and south; (c). The apparent yearly motion of the sun around the ecliptic; (d). The change in the appearance of the heavens in different months.

(5). Its velocity is eighteen and a half miles per second.

3. Dimensions and Mass.

(1). Its diameter is nearly 8,000 miles.

(2). Its density is about five and a half

times that of water—much denser than the sun.

(3). The earth has been weighed. To find its weight, write the figure 6 with twenty-one ciphers to the right, and call the result tons.

(4). Weight of anything on the earth is its force of gravity towards the earth.

(5). A body weighing 100 lbs. on the earth's surface would weigh 265 lbs. on the surface of Jupiter; the same body would weigh 2,760 lbs. on the sun's surface.

(6). On account of the centrifugal force of the earth, a body at the equator weighs less than it would if the earth did not turn on its axis.

Lesson 5. The Moon.

1. *While only a satellite,* she is next to the sun the most magnificent object in the heavens.

(1). The only heavenly body except the sun which exerts any perceptible influence upon the interests of human life.

(2). It is the nearness of the moon to us, which gives her her prominence.

2. *Motion and Distance.*

(1). At a mean distance of 238,000 miles, the moon revolves around the earth in twenty-seven and one-third days; but the synodic revolution occupies twenty-nine and one half days. This is the lunar month.

(2). An express train running at 50 miles an hour could go to the moon and back in a year, and the round trip at 2cts a mile would cost $9,520.

(3). The moon's velocity is about two-thirds of a mile per second.

(4). The moon's motion on the face of the sky is nearly thirteen degrees eastward from night to night, or about 51 minutes.

3. *Dimensions and Mass.*

(1). The diameter of the moon is about 2160 miles.

(2). The surface of the moon is one-fourteenth that of the earth's, and its volume one-fiftieth that of the earth's.

(3). It is the largest of the satellites in comparison with its primary planet.

(4). It would take 82 moons to equal the earth in weight.

4. *Physical Characteristics.*

(1). If the moon has any atmosphere, it is extremely rare. There seem to be no clouds, no moisture, no vegetation, no life on the moon.

(2). If the whole sky were covered with full moons, they would not equal the full light of noon-day sun.

(3). The telescope shows that the moon is beset with many mountains, plains, valleys and craters.

5. *Influences of the Moon.*

(1). The attraction of the moon in connection with that of the sun produces the tides.

(2). There seem to be disturbances also of *terrestrial magnetism* connected with the moon.

Lesson 6. Eclipses and the Tides.

1. *Eclipses of the Moon.*

(1.) Caused by the passing of the moon into the shadow of the earth.

(2). Can take place only at full moon, and that is when the earth is between the sun and moon.

(3). Total eclipses of the moon do not occur as often as those of the sun.

(4). There can never be an annular eclipse of the moon, because the earth is so much larger than the moon.

(5). An eclipse of the moon when central may continue total for about two hours.

2. *Eclipses of the Sun.*

(1). Caused by the passing of the moon between the sun and the observer.

(2). The moon's shadow averages 232,-150 miles.

(3). There are three kinds of eclipses: (a). Partial; (b). Total; (c). Annular.

(4). Must occur at time of new moon, and when the moon is at or near a node.

(5). There cannot be more than five nor less than two solar eclipses a year.

(6). Begin on the western edge of the sun, and pass off on the eastern.

(7). On June 8, 1918, will occur a total eclipse of the sun from Vancouver to Georgia.

(8). On June 20, 1955, will occur the longest total eclipse on record, viz: Near 8 minutes.

3. *The Tides.*

(1). Tides consist in a regular rise and fall of the ocean surface.

(2). The average intervals between corresdonding high waters on successive days at any given place is 24 hours and 51 minutes.

(3). It is flood-tide when the water is rising; and ebb-tide when it is falling.

(4). At new and at full moon, the sun acts with the moon in elevating the waters, because the sun, moon and earth are in a line.

Lesson 7. The Planet Mars.

1. *The fourth planet* in order of distance from the sun.

(1). The first of the superior planets, and the one most like the earth.

(2). Looks very much like a bright red star when seen with the naked eye.

(3). When it comes nearest the earth, which occurs at intervals of nearly fifteen years, it shines with a brilliancy rivaling Jupiter.

(4). The last very favorable opposition was in July, 1907.

2. *Motion and Distance.*

(1). The mean distance of Mars from the Sun is about 141,500,000 miles.

(2). Its average velocity is about 15 miles a second.

(3). It takes Mars 41 minutes longer to turn on its axis than it does the earth.

(4). Sometimes when in oposition it is less than 34,000,000 miles from the earth;

but at conjunction the average distance is 234,000,000 miles.

3. *Dimensions and Mass.*

(1). Its diameter is about 4,300 miles.

(2). Its surface is about two-sevenths that of the earth.

(3). It would take nine planets like Mars to equal the earth in weight.

(4). A body weighing 50 lbs. on the earth would weigh about 19 lbs. on Mars.

4. *As seen through the Telescope.*

(1). When nearest to us, and viewed through a telescope of a power of 75, it is as large as the moon.

(2). Being outside the earth's orbit, it never has the crescent phases as Mercury and Venus have; but it does have the gibbous phases.

(3). There are reddish spots over its surface which are believed to be continents.

(4). As no mountains have, as yet, been discovered, the elevations above the general level are probably not very great.

(5). It is believed that the brilliant white spots near its poles are masses of snow.

(6). About 30 years ago Schiaparelli announced the discovery of a system of canals, which some consider to be artificial.

5. *What of the Habitability of Mars?*

(1). Much has been written on this, but it is probable that the conditions of temperature and atmosphere on the planet render it unfit for habitation.

(2). Prof. C. A. Young says, "If life, such as we know life upon the earth, can exist upon any of the planets, Mars is the one."

Lesson 8. The Asteroids.

1. *The Space Between* the Orbits of Mars and Jupiter.

(1). This space was not known to be filled till the opening of the nineteenth century.

(2). Kepler and other astronomers believed that there was a planet in this space.

(3). Systematic search was made to find it.

(a). Jan. 1, 1801, *Ceres* was discovered.

(b). In 1802, Olbers discovered Pallas.

(c). In 1804 Juno was discovered by Harding.

(d). In 1807 Vesta was found, the only one ever visible to the naked eye.

(e). Discoveries of new ones have been going on since, until now there are known to be nearly 600.

(f). These little bodies are designated by numbers, though many of them have names besides.

2. *Description.*

(1). These little planetules are diminutive indeed.

(2). But *Ceres* and *Vesta* when nearest us appear as the 6th magnitude stars.

(3). *Ceres* has a diameter of 488 miles; Pallas nearly 300; and Vesta nearly 250.

(4). The others will probably average about 10 to 20 miles in diameter.

(5). The pull of gravity is so mild on these little worlds that a person could leap 60 feet into the air and sustain no injury in the fall.

(6). Eros which is No. 433, discovered in 1898, under favorable conditions comes within 13,000,000 miles of the earth.

(7). If the entire 500 were cemented together into one mass, the total weight would be only a small per cent of the earth's weight.

3. *How Did These Little Bodies Originate?*

(1). It is believed that the entire swarm of little bodies represent a single planet.

(2). It may be that the attractive power of the great Jupiter, just outside of their orbits, prevented the material out of which they were made from forming into a single mass.

(3). Another theory is that these little planetules may be the fragments of an exploded planet.

(4). A little over a hundred years ago, Olbers broached the theory that these little bodies are the fragments of a planet shivered to pieces in remote antiquity by some terrible catastrophe.

Lesson 9. The Planet Jupiter.

1. *The nearest* of the Major Planets, and the largest of all.

(1). It is five times as bright as Sirius.

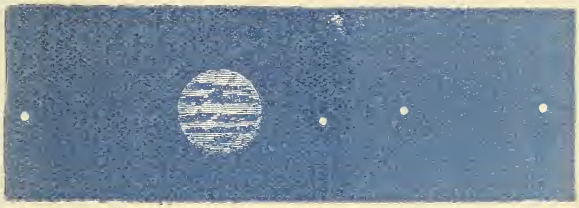
(2). When in opposition it illumines the heavens all night.

(3). One of the five planets discovered in primitive times.

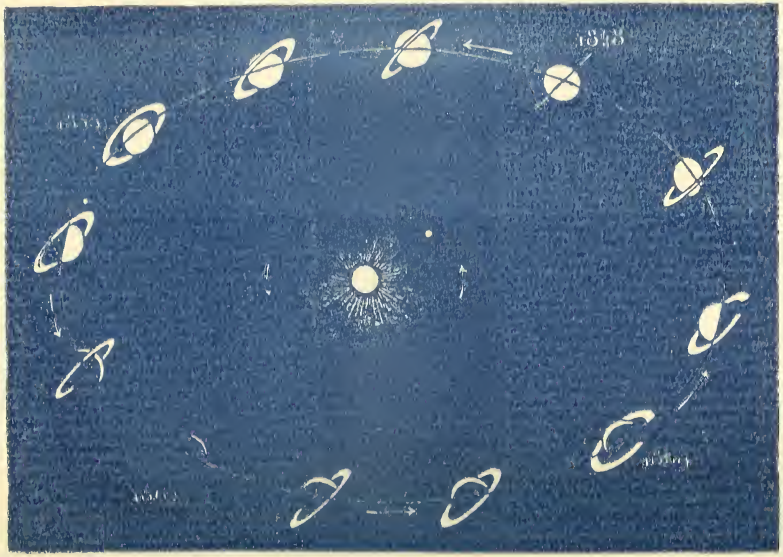
2. *Motion and Distance.*

(1). Its mean distance from the sun is 483,000,000 miles.

JUPITER AND HIS FOUR LARGEST SATELLITES.



"Ye men of Ephesus, what man is there that knoweth not how that the city of the Ephesians is a worshiper of the great goddess, Diana, and of the image which fell down from JUPITER?"—Acts 19:35.



SATURN'S RINGS IN VARIOUS POSITIONS OF HER ORBIT.

(2). It completes a revolution around the sun in nearly twelve years.

(3). Jupiter advances 30 degrees eastward yearly, and comes into opposition with the earth and sun every thirteen months.

(4). His seven attendant moons give him some dignity as compared with the planets heretofore considered.

(5). Though he appears to advance slowly among the stars, he is traveling at the rate of eight and a third miles a second, or 500 miles a minute.

(6). The inclination of his orbit to the ecliptic is only one degree and nineteen minutes.

(7). Turns on his axis in nine hours and fifty-five minutes.

3. *Dimensions and Mass.*

(1). His diameter is nearly 90,000 miles.

(2). It would take nearly 1,400 earths to make a Jupiter so far as volume is concerned, and he is larger than all the other planets combined.

(3). If he were as close to us as the moon, he would fill a space more than 1,500 times the apparent area of the moon's disk.

(4). It would take over 1,000 Jupiters to equal the sun in bulk and weight.

(5). The pulling power of gravity on his surface is about two and two-third times that of the earth.

4. *As Seen Through the Telescope.*

(1). With a magnifying power of 60, his apparent diameter equals that of the moon.

(2). A beautiful object in connection with the four larger moons.

(3). There are evidences of a very extensive atmosphere, and the planet is believed to be in the molten state, overlaid by cloud and vapor.

(4). The *"belts"* and the *"great red spot"* are noted features.

5. *Light and Heat.*

(1). Jupiter receives from the sun only one twenty-seventh as much light and heat as does the earth.

(2). His seven moons must present a beautiful appearance in the evening sky.

(3). His reflecting power is 0.62, and the question has been raised as to whether or not Jupiter is to some extent self-luminous.

Lesson 10. Saturn, The Ringed World.

1. *Planet six* in order of distance from the sun.

(1). The ancients knew no planets outside the orbit of Saturn.

(2). In appearance it is a star of the first magnitude.

(3). It advances eastward among the stars only 12 degrees annually.

2. *Motion and Distance.*

(1). Saturn revolves around the sun at a mean distance of 886,000,000 miles.

(2). It requires nearly 30 years to complete a revolution.

(3). Its velocity is six miles per second, or about 22,000 miles an hour.

(4). Saturn turns on her axis in 10 hours and 14 minutes.

(5). The inclination of her orbit to the ecliptic is about 28 degrees.

3. *Dimensions and Mass.*

(1). The diameter of Saturn is about 73,000 miles.

(2). As to volume it would take 770 earths to make one Saturn, but it is the least dense of all the planet family.

(3). A body on the earth, weighing 100 lbs. would weigh 150 lbs. on Saturn.

4. *As Seen Trough the Telescope.*

(1). Not until Galileo's day were the rings and Satellites found.

(2). The planet's spectrum is very much like that of Jupiter, but the dark bands are more pronounced.

(3). The most remarkable peculiarity to be noticed is its ring system.

(4). It is now known that the rings consist of a cloud of tiny satellites.

(5). The "belt" feature of Saturn is less distinct than that of Jupiter.

(6). The satellites will be considered in a future lesson.

5. *Light and Heat.*

(1). The light and heat received from the sun is only the one-hundredth part of that received by the earth.

(2). But her rings and ten moons must present a beautiful sight in the evening sky.

(3). The "albedo," or reflecting power is 0.52.

Lesson 11. Uranus.

1. *The seventh planet* in order from the sun.

(1). It was discovered accidentally by Wm. Hirschel, March 13, 1781.

(2). To a strong eye it is visible when surroundings are favorable.

(3). If Uranus were as near as the sun, it would appear twice as large as Jupiter; as it is it shines as though it were a star of the sixth magnitude.

2. *Motion and Distance.*

(1). The mean distance from the sun is 1,800,000,000 miles.

(2). It takes Uranus 84 years to circle the sun.

(3). Its eastward movement is very moderate, less than four degrees annually.

(4). Its velocity is four and a half miles a second, or 270 miles a minute.

3. *Dimensions and Mass.*

(1). Its diameter is about 32,000 miles.

(2). Its bulk is about 66 times that of the earth.

(3). It would take nearly 15 earths to equal Uranus in weight.

4. *Appearance, Light and Heat.*

(1). A few "spots" or "belts" have been found.

(2). It is attended by four moons.

(3). It receives only one three-hundredth part of the light that comes to our earth.

(4). Its reflecting power is very high, 0.64.

As to the time of revolution on its axis, nothing is known.

Lesson 12. Neptune.

1. *The last* in order of Distance from the Sun.

(1). This planet was discovered Sept. 23, 1846. The discoverer found it by searching for it and calculating its true place.

(2). Its discovery is considered one of the grandest achievements of the human mind. Leverrier and Adams share the honor of the discovery so far as the calculations were concerned.

2. *Motion and Distance.*

(1). Its mean distance from the sun is 2,800,000,000 miles.

(2). It requires 165 years for Neptune to complete a revolution around the sun. It has made only a partial revolution since its discovery in 1846.

(3). Its annual eastward motion is only about two and one-fifth degrees.

(4). Notwithstanding its apparent slowness, it is speeding through space at the rate of three and a third miles a second, or 12,000 miles an hour.

3. *Dimensions and Mass.*

(1). Its diameter is about 30,000 miles.

(2). It would take 53 earths to equal Neptune in volume, but only 17 earths to equal Neptune in weight or mass.

4. *Appearance, Light and Heat.*

(1). No visible markings on its surface.

(2). It has one moon, to be noticed later.

(3). Neptune receives only one nine-hundredth part of the light and heat which comes to the earth.

(4). Its reflecting power is 0.46, a little less than that of Saturn.

(5.) The sun as seen from Neptune would give nearly as much light as 700 full moons.

Lesson 13. The Satellites of the Solar System.

Our moon, on account of its magnificence and importance, was considered by itself in Lesson 5. As has been stated before, Mercury and Venus have no moons.

1. *The Satellites of Mars.*

(1). Only two have been discovered, *Deimos and Phobos.*

(2). They were discovered by Prof. Hall of the Naval Observatory, Washington, D. C., in 1877.

(3). The inner one, Phobos, circles around Mars in 7 hours and 39 minutes at a distance of 5,850 miles. It rises in the west and sets in the east.

(4). Deimos at a distance of 14,650 miles, requires 30 hours and 18 minutes to complete a revolution.

These little bodies are exceedingly small, probably from 6 to 15 miles in diameter.

2. *The Satellites of Jupiter.*

(1). Seven in all have been discovered; the first four in 1610 by Galileo; the fifth by Barnard in 1892; the sixth and seventh by Perrine in 1905.

(2). The four large ones were the first heavenly bodies ever discovered.

(3). Even in a small telescope, the large ones may be seen to change their positions from hour to hour.

(4). The inner moon circles around Jupiter in 42 hours and 27 minutes.

(5). The third one is much the larger, having a liameter of 3,600 miles.

Eclipses of some of these moons are almost daily occurrences.

3. *The Satellites of Saturn.*

(1). Saturn is attended by 10 satellites:

(a). Mimas discovered by Herschel in 1789.

(b). Enceladus discovered by Herschel in 1789.

(c). Tethys discovered by J. D. Cassini in 1684.

(d). Dione discovered by J. D. Cassini in 1684.

(e). Rhea discovered by J. D. Cassini in 1672.

(f). Titan discovered by Huyghens in 1655.

(g). Hyperion discovered by G. P. Bond in 1848.

(h). Iapetus discovered by J. D. Cassini in 1671.

(i). Phoebe discovered by Pickering in 1898.

(j). Themis discovered by Pickering in 1905.

(2). Titan is the largest one with a diameter probably exceeding 3,000 miles. It revolves around Saturn at a distance of 771,000 miles, in 15 days, 22 hours and 41 minutes. It can be seen in a 3-inch telescope.

(3). The outer moon, Phoebe, is 8,000,000 miles distant from the planet, so that the Saturnian system is about 16,000,000 miles in diameter.

4. *The Satellites of Uranus.*

(1). This planet has four moons.

(2). Two of them were discovered by Sir Wm. Herschel in 1787; the other two by Lassell in 1851.

(3). A very curious fact about these moons is that their orbits are nearly perpendicular to the plane of the planet's orbit, and they *revolve backwards.*

5. *Neptune* has only one moon.

(1). It is a little smaller than our moon.

(2). Its distance from the planet is 221,500 miles, and completes a revolution around it in 5 days and 21 hours.

(3). This moon also moves backwards.

(4). The basis for calculating the mass or weight of Neptune, which is 17 times that of the earth, is furnished by the revolution of this moon about its primary in the above mentioned time, 5 days and 21 hours.

Lesson 14. Comets.

1. *Comets* usually have three parts: The nucleus, the coma and the tail.

2. They often come unexpectedly and disappear rapidly.

3. The periodical return of a few have been calculated, some of which are the following:

(1). Encke's appeared in Sept. 1901.

(2). Brorsen's appeared on Feb. 25, 1890.

(3). Finlay's appeared on Feb. 17, 1900.

(4). Holmes' appeared on Apr. 29, 1899.

(5). Brooks' appeared on Nov. 5, 1896.

(6). Olbers' appeared on Oct. 19, 1887.

(7). Halley's due to appear May 17, 1910.

4. The large ones are magnificent objects, but they do not appear often. Examples, in 1811, 1825, 1835 (Halley's), 1843, 1858, 1874 and 1882.

5. It seems to be about time for another celebrated one to appear and such a one is predicted to appear in 1910—Halley's.

6. Comets are not confined to the limits of the Zodiac, as are the planets, but appear in every quarter of the heavens.

7. It has been estimated that there are not less than 17,000,000 comets within the solar system. Of these, some are invisible to the naked eye, and some are not conspicuous.

8. They obey the law of gravitation, and many of them *belong to* the solar system.

9. When they approach the sun, pass around it, and then recede in an ecliptic orbit, they will return again; but if they re-

cede in a parabolic or hyperbolic orbit, they will never return.

10. Some of them approach very near the surface of the sun.

11. Generally the quantity of solid matter is very small.

12. If the earth should come in contact with an ordinary comet, probably no harm would be experienced. The earth actually passed through the tail of the great comet of 1861.

Lesson 15. The Fixed Stars.

1. By the term *"fixed"* stars, it is not meant that they are literally at rest; for it is believed that all the stars of space are in motion. But as the stars maintain their relative positions from century to century without preceptible change, they are denominated *fixed* stars.

2. The solar system is hanging in space surrounded by an immense void peopled only by comets and meteoric matter. This mighty void is not less than 50 trillions of miles in diameter. The nearest object to our system known to astronomers is Alpha Centauri, which is 277,000 times our distance to the sun.

3. If you could stand on Alpha Centauri and look at our sun, it would appear no brighter than Polaris does to us, so great would be its distance; and you could not see a single one of our planets even if you should look through Lord Rosse's great 60 foot telescope, which is 6 feet in diameter.

4. The naked eye can see about 6,000 stars; a good opera-glass brings out about 100,000; a 3-inch telescope will reveal several hundred thousand; while the Yerkes telescope, 40 inches in diameter, probably makes visible not less than 100,000,000.

5. For convenience in studying the stars, they are grouped into constellations, and by this means they are the more easily located. About 48 of the constellations originated in ancient times.

6. More than a million stars have been catalogued, so that every star that would be visible in a 3-inch telescope can be found and identified, except those in the "Milky Way."

7. Our sun is a star, and it is known that he is traveling through space, taking with him his 500 members. It is also known that the sun is traveling toward a point in the sky near the borders of Hercules and Lyra, not far from the star *Vega*.

8. The distance to the stars is so immense that we can see only the light they emit, but not the surface of the bodies. No telescope yet constructed has been able to produce a sensible disk on any of them.

9. Stellar distances are measured by "light years." A light year is the distance traveled by a wave of light in a year at 186,000 miles a second. This amounts to nearly six trillions of miles. For example; the distance to Vega is 21 light years, and that means that it is nearly 126 trillions of miles away.

Lesson 16. The Pleiades and the Hyades.

We will now study the two beautiful clusters in *Taurus*. They are prominent and pass the meridian in the early part of the night in the month of January.

1. *The Pleiades.*

(1). A cluster of stars in the shoulder of taurus. Hesiod called them the seven Virgins.

(2). Ordinary eyes can see only six; but very strong eyes on exceedingly fine nights can see not merely seven, but three more.

(3). The Pleiades are mentioned twice in the book of Job (Job 9:9; 38:31-32), and

once in the prophecy of Amos (Amos 5:8), and also in Homer, who likewise names the Hyades.

(4). The Pleiades were always supposed to be seven, but a powerful telescope will reveal at least 625.

(5). The brightest star in the group is Alcyone.

(6). Madler, a German astronomer, in 1846, advanced a theory that there exists a great central point in the universe around which the sun, with his planets and comets, revolves in the course of millions of years; and he suggested that such center is *Alcyone,* the most conspicuous star in the Pleiades. But this is now generally considered to be a speculation.

2. *The Hyades.*

(1). According to the classic writers, there were seven stars in the head of Taurus, the Bull,, and they were known as the Hyades.

(2). It is a beautiful V-shaped cluster, just south of the ecliptic, and *Aldebaran* is the brightest one.

(3). This star Aldebaran is a first magnitude star, fiery red; and it is estimated to be moving through the heavens and away

from the solar system, at the rate of 30 miles a second.

(4). When the Hyades rose with the sun, the Greeks and Romans expected rain.

(5). A number of the bright stars near the ecliptic, situated between the Pleiades and Hyades, have a common motion toward the east, of about 10 seconds of a degree a century . While they are moving swiftly eastward, their distance is so great that the ordinary observer during his whole life time would see no change.

If you will examine these two clusters through a 3-inch telescope, you will be pleased.



THE GREAT COMET OF 1811.



This comet was seen for seventeen months. Its orbit is so vast that its greatest distance from the sun is fourteen times the distance of Neptune Astronomers have calculated that it will return in 3,000 years.

PART THREE.

PREPARATORY BIBLE STUDIES.

LESSON 1. A LIBRARY FOR THE BIBLE STUDENT.

To study any branch of knowledge successfully, we must have books. Books are not wisdom and knowledge, but they lead us on to them; they are the means, in other words, to their attainment. A person might *live in* a library of thousands of volumes and be no wiser on that account when he comes to die. Books should be carefully read and studied—at least some of them—and others should be consulted and referred to, when needed. In like manner, to study the Word of God, the student must have books—he must have a library. He need

not have a very large nor a very expensive one, but there are a few books which are absolutely necessary to the effectual study of the Bible. What are they, and how are they to be used?

1. A good, well bound teacher's edition of the Bible will be very helpful. If you have not one already, secure one in good, large print, on a good quality of paper, and with references. Such a book will help in many ways. There are many such books on the market, and they range in price from one dollar up to twenty-five, according to size and style of binding. One bound in flexible binding will last many years, and the helps to be derived from it are immense.

2. In addition to this, purchase a concordance to the Bible. Cruden's is one of the very best. And, if possible, get Young's Analytical Concordance, and also the Englishman's Greek Concordance. The value of these books as a means of Bible study is very great.

3. Get next, "The Bible Text Book," by the American Tract Society. It gives you all of the main passages on any given subject, so that you can turn and read from the word itself. No other book besides the Bible will be so helpful to you as this one

in preparing subjects for Bible readings, prayer meetings and sermons. Get a copy at once. You might hunt for a day or a week to get the references on a subject without this work, but with it you get them in a few minutes. The book just helps you to get at what you want in the quickest possible time; and as we live in an age in which we must do things in a hurry, the book is indispensable.

4. I would recommend next "Smith's History of the Bible," in two volumes. These books will help greatly in understanding the scriptures. Then get a good "Bible Dictionary" and a work an Sacred Geography and Topography, and, if you are able, get a good, practical Commentary of the entire Bible. We might recommend other books, but these will be found sufficient for all practical purposes. Now, let me say before concluding this chapter, that these books, industriously studied, with plenty of good common sense, will lead you *towards* the "depths of the riches of the wisdom and knowledge of God."

Lesson 2. Our Ignorance of the Bible.

"Ye do err, not knowing the Scriptures."—Matt. 22:29.

It is wonderful how much real ignorance there is in the world to-day with regard to the Bible. Many who might be suspected of being pretty well acquainted with it, know but little about it. A great many errors are committed on account of our ignorance of the Bible. "Ye do err," said Jesus to the Sadducees, "*not knowing* the Scriptures." The fact that they were ignorant concerning the Scripture doctrine of the resurrection is given as a reason why they erred. Or, to express it more correctly, their error consisted in their ignorance. But they had their Scriptures, the Law of Moses, in hand, and should have been better acquainted with it. We may excuse ourselves, but we must not think that God will excuse us on account of our ignorance of His word. Ignorance itself is a sin, when we have the means of information at hand, and it leads to many other sins.

Christians, especially, should be well enough versed in the Bible to enable them to converse intelligently about it, and especially that part of it which treats directly of the great scheme of redemption and the duties of those who have become Christians. They should know the names, authors and order of the sixty-six books which com-

pose the Bible. They should be enabled to give the history of all important persons, places and countries of the Bible. But, by all means, they should be well acquainted with the New Testament, and should know how to analyze it as to books, giving the main design of each one.

And every parent should set about a plan to teach it to his children daily. Teach the children when they are young to read the Scriptures, and they will love it when they are old. Too much time and attention cannot be given to the children. And right here I wish to say that some Christians get discouraged and fall for no other reason than the fact that they have neglected their Bible. The trouble is not a lack of Bibles, nor of Bible publishing companies; neither is it because the people do not purchase Bibles—*they do this*—but it is simply the fact that the word is not *read* and *studied*. Some parents do not read it themselves, neither do they urge it upon their children.

This general ignorance of the Bible on the part of the masses should not be so, because Bibles are being multiplied to a wonderful extent and circulated everywhere.

In conclusion, what are some of the results of being unacquainted with the Bible?

1. We become morally and spiritually lean. We become like Pharoah's lean kine. We make very slow progress, if, indeed, any progress at all. We become uninterested in religious matters, and soon drift away from the church. When once we are in this condition we are harder to rouse than ever before.

2. Finally doubts becloud the mind, and then the devil has a good hold upon us. For in proportion as he can lead us to indifference and unbelief he is doing his own work to perfection and tearing down that of the church.

Lesson 3 The Savior's Question to the Sadducees.

"Have ye not read that which was spoken unto you by God?"—Matt. 22:31.

The question and following statement by Jesus filled the Sadducees with astonishment. If they had been better acquainted with the word of the Lord they would not have blundered, and they would have escaped this dilemma. Much of our wrong doing results from the fact that we do not love and study the Bible as we should.

Now, let us make this question a *personal* and practical one: "Have *you* not read that

which was spoken unto *you* by God?" Did you read the word this morning, and will you read it again tonight before retiring? Did you read it the first day of the year, have you read it every day since, and will you read it every day henceforth as long as you live? How will you answer these questions, my brother, my sister? Remember, the entire Bible is *what* the Lord has spoken. Have you read it all, are you now reading it regularly, and are you trying to understand what you read? It may be that you have read many other books, and are well acquainted with the current events of the day, and keep posted in political and secular matters; but how about the Bible? Do you love the novel better? Remember that the Bible is God's revelation to man, and through it He speaks to His creatures, and mercifully tells them about their duties here, and what is to become of them hereafter. Then, if you are not in a regular course of Bible reading, get about it to-day. You will be a much better and happier Christian by so doing. "Have you not read that which was spoken unto you by *God*?" What God says is more important than what man says, is it not? Yes, but why? Because what God says is *all* true, but what

man says may be true or it may not. It may be partly true and partly not true.

Lesson 4. A Man Lead to his Conversion by Reading the Scriptures.

It was the Ethiopian eunuch, and the account may be found by reading Acts, 8:26-39.

"Read Esaias, the prophet."—v. 28.

"Heard him read the prophet Esaias."—v. 30.

"The place of the Scripture which he read was this."—v 32.

The preacher on this occasion was the evangelist Philip, who had been directed to the spot by an angel from Heaven. The man to be turned to Christ was a traveler from Jerusalem to Ethiopia, and was a worshiper of God according to the Jewish religion. He was evidently reading from the roll of the prophecy of Isaiah, and *that part* of the prophecy was about Christ. It is found in Isa., 53:7-8. Read and study it well,, and also the case as it actually occurred in the book of Acts.

How much better it would be for us to spend our time in reading the Scriptures

than in reading some trashy novel, or to spend it idly or foolishly!

It is profitable to read the prophecies, as much of them are fulfilled in Christ and apostolic times. Philip used that Scripture in Isaiah as a text, and preached unto him Jesus. We should not consider any reading dry or dull which points to the Savior of the world. Jesus may be seen all through the Bible. From Genesis to Revelation Christ is the theme, either in type, prophecy or fact. While the Old Testament is not a book of authority to us as a law, still it was written by inspiration, and is therefore a part of God's divine revelation. The Old and New Testaments are bound together, and each one helps us to understand the other. The quotations from the Old Testament by New Testament writers show that they recognized the Old Testament as Scripture, and as given by inspiration.

Now for a few practical thoughts. Many have turned to the Lord by reading. He who reads and meditates much has much faith. He who reads and meditates *little* has but little faith. Our faith in history and science is strengthened by reading. Then, brother, read more, and induce others to read; and read the Bible believing *every*

word of it. Remember, when you have the Book in your hand, that "These are the faithful and true sayings of God." (Rev., 22:6.) Prayerful and regular reading will clear away the doubts which the devil has implanted in the heart.

Lesson 5. Industry Necessary to Understand the Bible.

"Till I come, give attendance to reading."—1 Tim., 4:13.

To acquire a knowledge of any branch of learning it requires mental force, study and application. This is the one secret of being mighty in the Scriptures. Praying, wishing and hoping for knowledge brings it not, without much patient reading. To become a classical scholar, one must spend years in hard, persistent toil. And if you would understand God's word, you must give *attendance* to reading.

Much of the Bible is hard to understand, but it is not affirmed by any divine writer that it *can not* be understood. There are many dark passages in the prophecies, and some things which Jesus uttered while speaking in figurative language are not so easily understood. Yet, by an honest in-

quiry after the truth, that which appears dark becomes plain. Peter, in his second letter (2Pet., 3:16), affirms that there are "some things in Paul's epistles hard to be understood," which is true. But, is not the same true of astronomy, mathematics, logic and the natural sciences? Now, who will therefore affirm that those branches were not intended to be understood?

That God intended for us to understand His Word is evident:

1. From the fact that He made a revelation. A revelation could not have been made without revealing something. God determined to save man, and made it known by a revelation.

2. From the character of its contents. The Word of God is spoken of as "perfect," as "full and sufficient," as "sure," as "profitable" for man as a "lamp" to shine upon our way, and as "being given by inspiration." And Paul affirms (Rom., 15:4) that "Whatsoever things were written aforetime were written for our learning, that we, through patience and comfort of the Scriptures, might have hope."

From all of these considerations, it is plain that we may profit by a diligent study of the Word.

Now, to insure the best results, learn the original languages of the Bible, the Hebrew and the Greek, *if possible,* in your efforts to understand the Scriptures. This will give you an advantage over the mere English reader. Then, the lexicons and grammars will be of great service in independent study.

Lesson 6. The Value of the Bible in Meeting Temptation.

"*But He (Jesus) answered and said it is written.*"—Matt., 4:4.

The Bible is the Christian's fortification. It is a stronghold to the tempted man. To it he may come for deliverance. The devil will surely leave him when the word is brought up. (James, 4:7.)

There would not be so many failures in the Christian life if there was more Bible reading and praying. Jesus said (Matt., 26:41): "Watch and pray, that ye enter not into temptation." Have the word on the end of the tongue, and the temptation will be overcome.

Read and study here very carefully the temptation of our Savior in Matt., 4:1-11, and in the parallel passages. How did Jesus overcome the prince of darkness? What

was his weapon? I answer, it was the Word of God. You will observe that it was by quoting Scripture that Jesus put the devil to flight. To each temptation he responded, "It is written." If the Christian would always say, when tempted, "It is written," "Get thee behind me, Satan," he would have an easier time, and fewer temptations to overcome.

Brother Christian, when temptations assail you, go to the Word. If you are tempted to drink, turn to Proverbs, 23:31, and read: "Look not upon the wine when it is red, when it giveth its color in the cup, when it moveth itself aright," and the drink habit will soon cease. If you are inclined to lounge around home instead of going to the house of God on the Lord's day, turn to Heb., 10:25, "Not forsaking the assembling of ourselves together, as the manner of some is." If the devil puts it into your heart to dance, quote 1 John, 2:15: "Love not the world, neither the things that are in the world." Also Gal., 5:17-19, and Rom., 12:2. When tempted to say naughty things about some one, turn to James, 4:11, "Speak not evil one of another, brethren." Oh, how *strong* we would be if we only knew the Word! Are you weak and puny, brother, in

the Lord's cause? Do you feel no interest in the Word? Open your bible at Eph., 6: 10-18, and you will there find your source of strength as a soldier of Jesus Christ. What is it? "Put on the whole armor of God, that you may be strong in the Lord and the power of His might." "The sword of the Spirit, which is the Word of God," is an important part of the soldier's panoply. I want to fight; I must war a good warfare; I must fight the good fight of faith; God is my Father; Jesus is my Captain; I am a soldier; the word is my sword, and the devil is my enemy. How shall I fight? Heb., 12: 2: "Looking unto Jesus, the author and finisher of our faith."

Again, the reading of the Scriptures is the great source of nourishment to the soul. The soul must be fed as well as the body. Jer. 15:16: "Thy words were found, and I did eat them; and Thy word was unto me the joy and rejoicing of mine heart." 1 Pet., 2:2: "As newborn babes, desire the sincere milk of the Word, that ye may grow thereby."

Lesson 7. Read the Bible Daily.

"And searched the Scriptures daily, whether these things were so."—Acts, 17:11.

In conversation with the Jews, Jesus enjoined upon them the duty of searching the Scriptures (John, 5:39), "For," said He, "in them ye think ye have eternal life." Now, to *search* means to seek after with diligence, to hunt for something. Never open the Bible to read it in a careless, indifferent manner. Open it for a purpose; read it to find the rich truths which it contains; give yourself wholly to it, and think and ponder well what you read. And let this become a *daily* habit of your life. Sunday reading is a poor method. Did you ever think how long it would take you to read through the Bible by reading just one chapter every Sunday? (And a great many do not read even that much.) By reading one chapter in the Bible each Sunday, you read fifty-two chapters during the year, and, as there are 1189 chapters in the Bible, it will take you as many years as 52 are contained times in 1189, which are a little less than 23 years. Just think of it! You forget faster than you learn by that process.

Do you say that you cannot spare the time to read every day? Is it not true that you spend a great deal of time every day in foolishness and idleness? Now, suppose you devote that time to the study of the Scriptures, and see what a difference there will be in the course of a year. But, probably you say, my business, will not permit me to read so often, much as I might desire to do so. Are you realy in earnest, brother, when you say that? I believe that the busiest man in the world can and ought to read his Bible every day, and it is a lame excuse to say that he can not. But how can it be done?

1. Time. Set apart at least a half hour each day for this work. Let nothing interfere. Neglect other things before you neglect the Bible. Devote, say, ten minutes when you rise in the morning to Bible reading, ten at noon, and ten at night before retiring. If you will let this practice become a *habit,* you will soon love to read the Bible, and nothing can keep you from it.

2. And that is the right way to read the Bible, *because you love it,* and not because it is a duty. Fall in love with it, "delight" in it, as David did (Psa., 1:1-2), make it a real pleasure, make it more interesting than

the fascinating novel, or the newspaper, or the latest exciting book in the market.

3. Arrange to do this *now,* and begin the practice at once. Purchase a vest pocket Testament, and if you should be on a journey for a few days, you can carry the word with you in convenient form.

Lesson 8. The Bible Its Own Interpreter.

The Word of God harmonizes througout. It does not contradict itself, as some superficial readers and enemies of the Bible have claimed. True, there may be found some *apparent* contradictions, and some things hard for us to explain, and to thoroughly understand; but when the Bible as a whole is honestly studied and dealt with as other books of like antiquity, it can be made to explain itself. To illustrate what I mean, James says (Jas. 1-13) "For God cannot be tempted with evil, neither tempteth He any man;" while Gen. 22:1 reads as follows: "And it came to pass after these things that God did tempt Abraham." Now, one of these pasages says that God did tempt Abraham, and the other declares that he tempts no man. There is evidently an apparent contradiction here. How can we get out

of the difficulty? How can both of these pasages be true, and yet there be no real contradiction? The difficulty all comes from the word *"tempt."* When we understand that James' meaning of the word tempt is altogether different from that found in Genesis, all is plain. In the reference to Abraham, the word is used in the sense of *prove,* or *try,* and the revised version of this pasage reads that way, "God did *prove* Abraham," while James uses the word in the sense of *enticing to sin.* Now God tempts man in the former sense, but does not in the latter. In other words, the Lord frequently proves or tries men in the various circumstances of life, but he never entices or subjects any one to do wrong.

The word of God will always be found to harmonize after honest and faithful efforts are made to understand it. It has one Divine author, the Lord; but He used many different individuals, at different times, and under different circumstances, to write in human language what he wishes mankind to know. In studying the Bible, always use a copy with references, and many things hard to understand will be found explained in the references and in the marginal readings. Look at the passages on the same sub-

ject in other portions of the Scriptures, and they will throw light on the dark passages. For example, if the "New Birth," Jno. 3:1-8, is not made very plain by the Savior, read the parallel passages: Jno. 1:12-13; 1 Cor. 4:15; 1 Pet. 1:22-23; Jas. 1:18; Acts 2:38; Mark 16:15; Rom. 10:9-10, 17; and a flood of light will come to you, and all will be plain. Also study the context, and the character of the people addressed, and the circumstances that surround them, as well as the history of the writer.

LESSON 9. COMMIT SCRIPTURE TO MEMORY.

This will be found a good practice. First, it will strengthen the mind, and the practice of memorizing a few verses of God's word each day will be beneficial in many ways. The word of the Lord should be hidden deep down in our hearts. "Then *remembered* I the word of the Lord," said Peter, Acts 11:16. "Remember ye the law of Moses my servant," Mal. 4:4. "Remember the word that I said unto you," Jno. 15:20. 'But beloved, remember ye the words which were spoken before of the Apostles of our Lord Jesus Christ," Jude 17. Thus you see we have chapter and verse for this practice.

It is enjoined upon us to remember the words spoken, but how few are doing this? If we would be mighty in the Scriptures, let us retain more of what we read. The Christian who makes this a daily habit will be much better prepared for his work than he would otherwise be. Whether his business is preaching or other Christian work, it matters not; he has an advantage over him who never memorizes any portion of the Bible. Try it, brother Christian. If you are in a bed of affliction, or about your daily work, it will be a great comfort to have the word hidden away in the heart, so that you can recall it when it is needed. And if you are in the midst of a controversy with the enemy, it will be on your tongue's end to put to silence the false reasoner. "Is not my word like as fire, saith the Lord, and like a hammer that breaketh the rock to pieces?" Jer. 23:29.

While the age we live in is not an age of retaining, but of reading, change the order a little here and *retain more* while you *read less*. Be sure to read at least three chapters in the Bible per day, however. *Never neglect* that. But memorize as much as three verses every day. Get a practical Scripture,

or a promise, or something that will inspire you to better work.

Lesson 10. Why was the Bible Written?

There are two main reasons why God gave to the world a divine revelation.

1. *To reveal himself in the great work of redemption.* Nature tells us something of his power and majesty. "The heavens declare the glory of God; and the firmanent showeth His handiwork." Psa. 19:1. But the wisest could not by searching find out God without a revelation. Some read nature and say that they can find no God, while others read both nature and revelation and find God in both. Happy is the man who can see the evidences of a Supreme Being in everything. But it is only in revelation that we can see God's great love to the world and His willingness to save mankind.

This revelation which God has given is declared to be *perfect.* 'The law of the Lord is perfect, converting the soul." Psa. 19:7. God has said all that needs to be said; He has made known all that needs to be made known; He has written all that needs to be written. His revelation is perfect.

(1). It is perfect as to its fullness. Rev. 22:18. Man must not add anything to it, nor take anything from it.

(2). It is perfect as to its power in leading man to believe. Faith comes by hearing, and hearing by the word of God." Rom 10:17.

(3). It is perfect as to the effects which it works in the soul. It imparts joy and happiness. "The Statutes of the Lord are right, rejoicing the heart," said the Psalmist. "These things have I spoken unto you that my joy might remain in you, and that your joy might be full." Jno. 15:11.

(4). It is perfect in making known the way of salvation. Where else besides the Bible can we learn the way of eternal life?

2. *To reveal man unto himself.* We learn something about ourselves in the books that men have written. Text-books on physiology, hygiene, and anatomy tell us about the structure of the human body, and how we may have good health. But the Bible tells us all about ourselves; that we have a compound nature—a body formed of dust, and a soul. Gen. 2:7; 1 Thess. 5:23. Paul speaks of the "outward man which perishes, and the inward man which is renewed day by day. 2 Cor. 4:16. The Savior taught that the soul is of vaster importance than

the whole world. Mark 8:36-37. The Bible teaches us that man is an imperfect being, sinful and fallen; and that his redemption is in Jesus Christ. The Bible is a looking glass in which a man may behold his natural self. Jas. 1:23-24. He can there see all of his imperfections and blemishes. The Bible also reveals to man his duties here in this world, and what is to become of him hereafter.

Lesson 11. The Promises of the Bible.

"The Lord is not slack concerning his promise, as some men count slackness."—2 Pet. 3:9.

The promises of the Bible are many and various. Some of the Bible is command and statute; some is poetry; some is warning and threatening, and some is promise. There are many precious promises all along through the Bible, and it is delightful to read and meditate upon them. The first clear promise in the Bible has reference to the Savior, and the victory he is finally to gain over the devil. Gen. 3:15. There are also promises: (1). To the child of God, Jno. 14:13, where a reference is made to the "house of many mansions." Jesus has

gone to prepare a place for each one of his followers. (2). To the penitent, Acts 2:38:39, which are pardon and the gift of the Holy Spirit. (3). To the finally faithful, Rev. 2:10, which is the crown of life. (4). To the winner of souls, Dan. 12:10, which declares that they shall shine as the stars forever and ever. Dear reader, search for the precious promises of the Bible, and learn at least one each day, and you will be richly paid for all the time, effort and trouble spent. And when you get old and cannot read, you will have the satisfaction of meditating much on the beautiful promises of God's word, and they will be such a source of happiness to you. Learn a promise contained in a single verse of Scripture each day, and in ten years you will have memorized 3,650 verses of Scripture; and you will have that many verses to cheer and stimulate you, and to strengthen your hope in God. It is a good plan to have a little blank book, to be called your "Promise Book," bound in cloth, so that it will last as long as you live. Begin to gather promises Jan. 1, or any other day in the year, and put down the promise, and Scripture reference opposite, with the date. Then turn to the Bible and memorize it. Go on in this way re-

cording a promise each day till the book is filled, and what a treasury of promises you will have after awile!

Lesson 12. The Bible Inspired.

"All Scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness."—2 Tim. 3:16.

That the Scripture of both the Old and New Testaments are inspired is evident from the very best testimony. The term "Scripture" in the passage quoted above certainly has reference to the Old Testament, and, it may be, to portions of the New, but I wish to give some other proofs of the inspiration of both Old and New Testament Scripture right here. The writers themselves claimed inspiration. "The Spirit of the Lord spake by me, and His word was in my tongue." 2 Sam. 23:1-2. Now, David uttered these words, and he was one of the Old Testament writers. God's word was in his tongue, and he spake by the inspiration of the Holy Spirit.

"The word of the Lord came expressly unto Ezekiel, the priest, the son of Buzi, in

the land of the Chaldeans, by the river Chebar, and the hand of the Lord was then upon him." Ezek. 1:3. This passage certainly teaches that the things spoken by Ezekiel were the Lord's words, but that they were spoken through Ezekiel as an instrument. He was inspired. Read the entire book. "Remember ye the law of Moses, my servant, which I commanded unto him in Horeb for all Israel, with the statutes and judgments," Mal. 4:4. The law given by Moses, with the statutes and judgments, was God's law through Moses He was God's prophet and law giver, and what he spoke in the ears of all Israel and what he wrote were by the inspiration of God.

Let us next consider the fact that the New Testament authors seem to bear testimony to the inspiration of the Old. "Search the Scriptures, for in them ye think ye have eternal life," John 5:39. Jesus certainly had reference to the thirty-nine books of the Old Testament here. They testified of Him. Read here also Deut. 24:44-45. And by reading Acts 3:20-24 we get another valuable testimony from Peter. He claims that it was God who spake through Moses and all the prophets concerning the Lord Jesus Christ.

And now, if the Old Testament is inspired, so is the New. But we offer the following *proofs* of the inspiration of the New Testament:

The writers were recognized as inspired by those to whom they wrote, and they claimed inspiration. "When ye received the word of God, which ye heard of us, ye received it not as the word of men, but as it is in truth, the word of God, which effectually worketh also in you that believe." 1 Thess. 2:13. Now read 1 Cor. 2:4; 2 Pet. 3:15-16; and Jude, 17. Many other Scriptures might be produced, but is there any further need of testimony? When you are reading the Bible, then, you are reading the Word of God.

But what does Paul say about this inspired word in 2 Tim. 3:16-17?

1. *"It is profitable."* All of the time we devote to its study, then, is time well spent. But how is it profitable?

(a) "For doctrine." (b) "For reproof." (c) "For correction." (d) "For instruction in righeousness."

2. *"It thoroughly furnishes the man of God to every good work."* The person who desires to be an efficient worker for Christ

may come to the Bible with perfect assurance of full instruction.

Lesson 13. Able to Make Wise Unto Salvation.

"*And that from a child thou hast known the Holy Scriptures, which are able to make thee wise unto salvation through faith which is in Christ Jesus.*"—2 Tim., 3:15.

As the New Testament had not yet been written as a whole and gathered together, the apostle must have referred to the Old Testament writings here, by the expression "Holy Scriptures." But how could the Old Testament make wise unto salvation? It could not, except through faith in Jesus as the Savior of the world. Christ is seen all through the Old Testament in prophecy, type and promise. From first to last, it all centers in Him. The first promise in the Bible (Gen. 3:15) is a clear reference to the Savior, described there as the "Seed of the woman" who would "bruise the serpent's head." The offering of Isaac by Abraham (Gen. 22:1-12) pointed to the great offering, once for all, the Lord Jesus Christ. The whole Tabernacle service, described in the Pentateuch, gives a beautiful lesson looking

to gospel times. The giving of the law through Moses on the mount is typical of the giving of the better law by Jesus Christ on the day of Pentecost (Acts 2:1-38). Every slain lamb under the old covenant pointed to the "Lamb of God, who taketh away the sins of the world."

In like manner, the reader is made much wiser by reading the prophecies of Isaiah, Jeremiah, Ezekiel, Daniel and all the others, as many things in them look to gospel times for their fulfillment. It was in this way that Timothy was made wise unto salvation. His mother and his grandmother were his instructors, and they had faithfully instructed him even from his youth in these great matters. He who reads the Old Testament properly has his faith in Jesus increased, and is made wiser unto salvation.

Lesson 14. Some Rules for Bible Study.

"Study to show thyself approved unto God."—2 Tim. 2:15.

It is, then, a command by inspiration to study the Word. And, as we do not expect to learn and understand the information in any other book till it is studied, neither should we expect to understand the Bible

till it is carefully read and studied. "Study," said the apostle; but he gave no particular rules for so doing in this connection. But we will offer a few rules which we have found to be good ones, in the study of the Holy Scriptures:

1. *Study the Bible by books.* Take up a book at a time, and give it a thorough reading. Study for example, the book of Genesis, which containes fifty chapters, and spend at least two or three months on it before beginning some other book. Then change and read a book in the New Testament; for example, one of the gospels or one of Paul's letters. Do not hurry over the reading. Take plenty of time.

2. *Study by topics.* Take, for example, the subject of "Hope," based on 1 Pet. 3:15: "And be ready always to give an answer to every man that asketh you a reason of the hope that is in you." Now, gather together all of the principal passages on this subject, and study them well. This will prove a valuable and pleasant method of Bible study, but you must keep your Bible Text-book and Concordance close at hand.

3. *Study regularly every day.* This is one of the most important rules that we can

give. He who reads his Bible every day will never stumble and fall. He is secure against the dangers of this world.

4. *Study the Word critically.* It is not out of place to have a critical turn of mind while reading the Bible, if you are searching with an honest purpose. When reading anything, it is natural to inquire, "Why is this so?" The wise man said, "I applied mine heart to know, and to search, and to seek out wisdom, and the reason of things." Eccl., 7:25.

5. *Study with intense interest.* That is, be interested in what you are reading. Get full of the subject. Be wholly absorbed for the time being, in the matter under consideration. The Bible is the most interesting book in the world. God's great love in redemption is its theme.

6. *Study it prayerfully.* Ask God's blessing on your earnest efforts. Invoke the divine guidance. The Psalmist said: "Open Thou mine eyes, that I may behold wondrous things out of Thy law."—Psa. 119:18.

7. *Study it, believing every word of it.* Do not doubt when you read. God is the author of it, and it is all true. "Heaven

and earth shall pass away, but my word shall not pass away."—Matt. 24:35.

We will, in concluding the lesson, give a few Bible rules, which, if observed, will lead you to successful study:

(1). "Give attendance to reading."—1 Tim. 4:13.

(2). "Search."—John 5:39; Acts 17:11.

(3). "Seek."—Isa. 34:16; Eccl. 7:25.

(4). "Meditate."—1 Tim. 4:14; Psa. 1:1-2.

(5). "Compare."—1 Cor. 2:13.

Lesson 15. The Proper Division of the Word.

"Rigthly dividing the Word of Truth." —2 Tim., 2:15.

Nothing is so important as right under-sanding here. The Bible can be studied to a much better advantage if we have the right conceptions of this subject. And then the student will be enabled to avoid much confusion. Every part of the Bible is not equally important to every individual. Some of it was addressed primarily to the Jews, while other portions were intended for all people. Remember that the Bible is not a single work of only one author, ex-

cept in the sense that God is the author of it, but it is composed of sixty-six different books, by about forty different authors. Neither was it all written at one time, but the different parts of it were composed during a period of not less than 1600 years.

Let us consider its proper division here, so that we may get the most good out of it while we are studying it.

1. The Bible is one book, yet it is composed of *two great divisions*: The Old Testament, consisting of thirty-nine books, by about thirty different authors; and the New Testament, consisting of twenty-seven books, by eight different authors. The Old Testament is further divided into 929 chapters while the New has only 260 chapters. This latter division is man's work, but it is a great convenience. A declaration from Paul here will help us to understand these two great divisions, Heb. 1:1-2: "God, who at sundry times and in divers manners, spake in *time past* unto the fathers by the prophets, hath, *in these last* days, spoken unto us by His son."

The "time past" referred to here has reference to the entire period from God's first revelation to man till the coming of Christ, while "these last days" refer to God's reve-

lation through Christ and the Apostles, and embrace only that part of the Bible called the New Testament.

2. There is also a *sevenfold division* of the Bible, which we will consider here. Jesus said, Luke 24:44, "That all things must be fulfilled, which were written in the law of Moses, and in the prophets, and in the Psalms, concerning me." Thus it is seen that the Old Testament has three great divisions. (1). "The law of Moses," which is called the Pentateuch. (2) "The Prophets." (3) "The Psalms." This latter division embraces several other books besides the one called "The Book of Psalms," and is sometimes known as the Holy writings or Devotional Books. If you wish to study these divisions thoroughly turn to page 651 in Smith's Old Testament History, and you will find a full account of them.

As to the New Testament, it is naturally divided as follows:

(1) *Biographical.* Its first four books, Mathew, Mark, Luke and John, tell about the wonderful life of the Savior; his deeds of love and mercy; his power over nature, disease and death; his trials, crucifixion, death, burial, resurrection and ascension to heaven. The reading of these books will

lead to faith in Him as the Savior of the world.

(2) *Historical.* Its only strictly historical book is the Acts of the Apostles. We read here of a new order of things. The old covenant is now done away. The Jewish church is now at an end, and the church of Christ has its beginning. The apostles under the inspiration of the Holy Spirit begin to preach Jesus Christ and him crucified. This book gives the history of the establishment of the church among both Jews and Gentiles. It is called the Book of conversions, and contains the law of pardon for all time to come. Read especially Acts 2:38; 9:1-15; 10:1-47; 16:16-34; 22:1-16.

3. *Episolary.* The third division consists of twenty-one letters addressed to the saved. They were not written for unbelievers, although this class may profit by reading them. They teach the children of God how to grow in grace, knowledge, power, strength and joy. We learn from them how to overcome the temptations of the world, and how to go on unto perfection. Some of these letters were written to churches, and some to individuals. Paul wrote fourteen of these epistles, James wrote one, Pet-

er wrote two, John wrote three, and Jude wrote one.

4. *Prophetical.* And the last division is the book of Revelation, which is prophecy. It shows that the church of Christ, after many hard struggles, will finally triumph. "The kingdoms of this world will become the kingdom of our Lord and of his Christ, and he shall reign forever." Rev. 11:15. Much of this book is unfulfilled, but God's children ought to study it, and they will find much in it to encourage and strengthen them.

Lesson 16. More About the Bible.

We never get tired of learning about the Bible. It is a living book. It is always fresh and new; and the more we read it the more we want to read it. We get fresh courage every time we look into it. It brightens our hope each time we read it. Please consider, then, a few things which will be helpful to you:

1. The word Bible means The Book. It is the best book in the world. It has more influence over the world than any other book. Infidels have tried to kill its influence and to crush it from the face of the earth,

but all of their efforts have been in vain. The Bible is living still. The Bible is better understood today than ever before. It is being read by more people now than it has ever been in any previous age. It is being translated into more languages, and published and scattered abroad over the earth more freely than it has ever been before. It comforts more broken hearts than any other book. It gives more real happiness than all other books in the world combined. It is THE BOOK. No other book is to be compared with the Bible. If you will read it and obey it, dear reader, it will lead you to heaven.

2. It is variously spoken of by the divine writers as the "Scriptures," the "Holy Scriptures," the "Scriptures of Truth," the "Word," the "Word of God," the "Word of Christ," the "Word of Truth," the "Book," the "Book of the Lord," the "Book of the Law," the "Oracles of God," and the "Sword of the Spirit." All of these designations are appropriate. It is a full revelation of God, and sufficient for all of our wants. It is an unerring guide to the children of men. While we are in the darkness of this world it is a lamp unto our feet and a light unto our pathway. God's Word

is living and powerful; it lifts up the savage, and melts the hardest heart. It was written for our perfect instruction. Nothing is ever at any time to be added to it, or taken from it. It is *perfect*.

3. *Conclusion*. God is the author of the Bible. He inspired about forty men to write it. About thirty men wrote the Old Testament and eight men wrote the New. From the time the first book of the Old Testament was written till the last one was composed there transpired over one thousand years of history. The first, in order of time, of the books of the Bible, was written about 1520 years B. C., while the last one was written 96 years A. D. The Bible was, therefore, composed during a period a little over 1600 years. A period of about sixty years transpired from the time the first New Testament book was written till the last one was composed.



PART FOUR.

BIBLE STUDIES IN OUTLINE.

BIBLICAL HISTORY.

Lesson 1. Creation to the Exodus, B. C. 1491.

Bible History is really the basis of successful Bible study.

I. *We begin with creation and run over* 2513 *years of the very earliest history of mankind.*

1. Scriptures to be studied: Genesis and Ex. down to 12:37.

2. Genesis runs over 2369 years, and Ex. 12:37 brings the history down 144 years further, to the EXODUS.

3. This 2513 years is called the Patriarchal Dispensation.

II. *Look up and study the following*:

1. The most prominent persons of this lesson.

2. The countries, towns, rivers, seas and mountains.

3. Creation. Fall of Man, Flood and call of Abraham.

4. Histories of Isaac, Jacob, Joseph, Moses and Pharaoh.

NOTE: Study the lesson thoroughly, and answer the questions by numbers.

QUESTIONS.

1. How much time does this lesson cover?

2. Mention the prominent persons of this lesson.

3. What countries, cities, rivers, seas and mountains are mentioned in this lesson?

4. Mention the main facts in the lives of the following persons: Adam, Enoch, Shem, Abraham, Jacob, Laban, Esau.

5. Where did Abraham build altars? Why?

6. How long after Enoch was translated till the flood?

7. Give dates of the following events: (1). Death of Seth. (2). Death of Noah. (3). Building of Babel. (4). Death of Isaac. (5). The famine in Canaan. (6). Death of Joseph. (7). Call of Moses.

8. Give the histories of Lot, Ishmael, and Abimelech.

9. Where was Luz? Mamre? Padan-Aram? Ararat? Sechem? Dothan?

10. How long from the death of Joseph to the Exodus?

11. Describe the preparations for the Exodus.

Lesson 2. Exodus to the Death of Joshua.

This lesson does not embrace so much time as lesson one, but the scripture lesson is quite extensive.

I. *Begin the lesson at Ex.* 12:37, *and study the remainder of Exodus, Numbers, Deuteronomy and Joshua, also Lev.,* 8 to 10.

1. The beginning of the lesson finds Israel still in Egypt, but marching out.

2. It closes with the death of Joshua, B. C. 1426.

3. The lesson, therefore, embraces a period of 65 years.

II. *Important Transactions.*

The Exodus, Crossing the Red Sea, Giving the Law, Setting up the Tabernacle, Forty Years Wandering, Death of Moses, Conquest of Canaan, Death of Joshua.

QUESTIONS.

1. On what day did Israel leave Rameses, and what was their number?

2. Mention the stopping places from Rameses to Sinai.

3. Describe the crossing of the Red Sea.

4. Mention the particulars of the giving of the law. When did that covenant cease?

5. Give a brief description of the Tabernacle with its furniture.

6. Mention the chief incidents of the wanderings to the death of Moses.

7. Describe the defeat of Amalek.

8. Mention particulars of the destruction of Korah, Dathan and Abiram.

9. Describe the crossing of the Jordan, and the fall of Jericho.

10. How was Canaan divided among the Tribes?

11. Give dates of the following events: (1). Mission of the twelve spies. (2). Moses' sin at the rock. (3). Deaths of Miriam, Aaron and Moses. (4). Setting up of the Tabernacle at Shiloh. (5). Destruction of Ai. (6). Standing still of the sun and moon. (7). The burning of Hazor.

12. Where was Joshua's inheritance?

13. What and where were the six cities of refuge?

14. Where was Kadesh-Barnea? Mount Hor? Tabor? Hermon? Ebal? Nebo?

Lesson 3. Joshua's Death to Anointing of Saul.

This lesson runs over 331 years, and brings us down to the inauguration of the undivided monarchy.

I. *Scriptures to be Studied.*

1. Judges, Ruth and first 10 chapters of I Samuel.

2. The book of Judges records the history from Joshua to Samson, and covers a period of over 300 years.

3. The incidents recorded in Ruth occurred in the days of the Judges.

II. *Prominent Persons.*

1. The 15 Judges.

2. Naomi, Ruth, Boaz and Saul.

III. *While studying,* note the different nations spoken of, as the Canaanites, Philistines, Amalekites, Midiantes and Moabites. Study the geography of these countries.

QUESTIONS.

1. Give characteristics of the book of Judges.

2. Who was the first Judge? The second?

3. What woman as Judge delivered Israel?

4. Tell about Gideon's call and work as Judge.

5. How long did Tola and Jair judge Israel?

6. Describe Jephthah's work. What was his vow, and what resulted from it?

7. Describe briefly the work of Samson.

8. What kind of Judge was Eli? Describe his death. How old was he then?

9. Describe the early life of Samuel, and his relations with Saul.

10. Whose history is recorded in the book of Ruth?

11. Why did Elimelech and Naomi go to dwell in Moab? Where is Moab?

12. Who was Boaz? Who was Ruth?

13. Who wrote the book of Ruth?

14. How long did the ark remain in the country of the Philistines?

15. Who was Dagon?

16. Where were Askelon and Gaza?

17. In what year B. C. does the present lesson terminate?

Lesson 4. Anointing of Saul to the Death of David.

This is a very important time in the history of God's people. The monarchy has been inaugurated, and we are now to study the history of two kings.

I. *Scriptures to be Studied*:

1. The remainder of 1 Samuel, all of 2 Samuel; 1 Kings 1 and 2; and the parallel history in 1 Chron. 10 to 29.

2. Time covered, 80 years, from 1095 to 1015 B. C.

3. It embraces the two reigns of Saul and David, and each of them reigned 40 years.

4. Those Psalms of whichDavid is author were composed during this period.

Questions.

1. When was Saul made king? How long did he reign, and how did he die?
2. What wars of Saul are recorded in 1 Samuel 11th to 16th chapters.
3. Was Saul obedient to the Lord?
4. What can you say of David and Goliath?
5. Describe David's flight from the court of Saul.
6. Why did Saul desire the death of David?
7. Describe David's kindness and generosity to Saul.
8. When did Samuel die, and what effect did it have on Israel?
9. What civil war after David was made king in Hebron?
10. How many times was David anointed?
11. How old was David when he began to reign?
12. Describe the invasion of the Philistines after David was made king over all Israel.
13. Describe the war with the Ammonites. (2 Sam. 9 and 10.)
14. Give dates of the following events:

(1). David's great sin.
(2). Birth of Solomon.
(3). Revolt of Absalom.
(4). Revolt of Sheba.
(5). Adonijah's rebellion.

15. What became of Saul's seven sons?

16. What was David's last charge to Solomon?

Lesson 5. Death of David to the Division of the Kingdom.

We are to study now the life and reign of Solomon. The undivided monarchy now takes its place among the great surrounding monarchies of Solomon's time.

I. *Scriptures to be Studied*:

1. The first eleven chapters of 1 Kings; and the first nine chapters of 2 Chronicles.

2. This lesson covers a period of 40 years, from 1015 B. C. to 975 B. C.

II. *The Great Events of his Reign.*

1. Anointed King.

2. The building of the Temple and its dedication.

3. Solomon's other buildings.

4. Visit of the Queen of Sheba.

5. His great sins towards the latter part of his life.

Questions.

1. Mention briefly the main facts in Solomon's life till the building of the temple.

2. Who was Solomon's mother? How did Solomon get possession of the throne?

3. What was Solomon's provision for one day? What was the extent of his dominion?

4. How many proverbs and songs are attributed to him? What of his wisdom?

5. When did Solomon begin the temple, and how long was he in building it? In what year was it completed?

6. Describe the different parts of the temple. Tell about its dedication.

7. Give particulars of the building of Solomon's house.

8. What was God's covenant with Solomon when he appeared to him the second time?

9. Describe the visit of the Queen of Sheba. Where was Sheba? What gifts did Solomon receive from the queen?

10. What of Solomon's chariots and horsemen?

11. Of what nationalities were Solomon's wives? What law did he violate in marrying these wives?

12. Describe the rending away of the kingdom.

13. When and where was Solomon buried?

Lesson 6. Division to the Captivity of the Ten Tribes.

There are now two kingdoms. Jeroboam becomes the first king of Israel; and Rehoboam the first king of Judah.

I. *Scriptures to be Studied:*

1. The remainder of 1 Kings, and the first seventeen chapters of 2 Kings; also 2 Chronicles 10 to 31.

2. This lesson runs over 254 years of history.

II. During this peroid there reigned all of the 19 kings of Israel and the first 13 rulers of Judah.

III. Seventeen prophets appeared during this period, viz: Ahijah, Shemaiah, Azariah, Hanani, Jehu, Elijah, Micaiah, Elisha, Jehaziel, Jehoiada, Jonah, Amos, Hosea, Joel, Isaiah, Micah and Obed.

Questions.

1. Describe the revolt of the Ten Tribes.
2. How long did Rehoboam reign, and what was his age when he began to reign?
3. How long had Jeroboam been on the throne of Israel when Asa began to reign over Judah? What kind of king was Asa?
4. Describe the reigns of the six kings who succeeded Jeroboam.
5. How long did Zimri reign? How did he die?
6. Give the story of Elijah.
7. Who was Ben-Hadad? Give his history.
8. Who was Jezebel? Give her history.
9. When did Ahaziah begin to reign over Israel? What kind of king was he?
10. Describe the translation of Elijah.
11. How long did Jehoram reign over Israel?
12. How was the Shunamite's son raised?
13. How was Naaman cured of his leprosy?
14. Describe the great famine in Samaria.

15. What became of the heads of the 70 sons of Ahab?

16. Describe the reigns of Athaliah, Amaziah and Jeroboam II.

17. How long did Jehoash reign? What kind of king was he?

18. When did Jehoahaz begin to reign over Israel?

19. Describe the reigns of Shallum, Pekah and Hoshea.

20. Give particulars of the captivity of Israel. Who was Shalmaneser? Where was Assyria?

Lesson 7. Captivity of the Ten Tribes to the Babylonian Captivity.

Hezekiah is still on the throne of Judah; he began to reign B. C. 726, five years before the captivity of Israel, and he reigned 29 years.

I. *Scriptures to be Studied*:

1. From the 18th chapter of II Kings to the conclusion of the book; also from the 31st chapter of II Chron. to the conclusion of the book.

2. It would be well to study also portions of Jeremiah, Ezekiel and Daniel and the

book of Lamentations to get the full benefit of this lesson.

3. This lesson covers 133 years, down to 588 B. C., and embraces the history of the last 8 kings of Judah.

4. These seven prophets appeared during this period: Nahum, Zephaniah, Jeremiah, Habakkuk, Daniel, Ezekiel and Obadiah.

Questions.

1. Describe Hezekiah's reign. How many years did he reign after the captivity of Israel?

2. Who was Sennacherib? Give his history. In what year did he come up against Judah?

3. How did Sennacherib die?

4. Who informed Hezekiah of his death? How was his life lengthened, and how many years?

5. Describe Manasseh's character. How long did he reign?

6. How old was Amon when he ascended the throne? How long did he reign, and how did he die?

7. What kind of king was Josiah? How long did he reign, and at what age did he ascend the throne?

8. What prophecy, made 351 years before this, concerning Jeroboam's altar at Bethel, was fulfilled by Josiah?

9. What was the length of Jehoahaz' reign.

10. Give the particulars of Jehoiakim's reign.

11. Tell about the reigns of Jehoiachin and Zedekiah.

12. Give a full description of the Babylonian captivity. Who was Nebuchadnezzar? Where was Babylon?

Lesson 8. Babylonian Captivity to the Birth of Christ.

The 70 years of captivity predicted by Jeremiah (25:12) are dated from B. C. 606, but the work was not completed till B. C. 588.

The captivity was brought to a close by the decree of Cyrus (Ezra 1:2.) B. C. 536.

I. *Scriptures to be Studied*:

1. Ezra, Esther and Nehemiah.

2. Also from the 26th chapter of Ezekiel to the close; from the 3d chapter of Daniel

to the close, and the opening chapters of Matthew and Luke.

3. This lesson runs over 584 years down to B. C. 4.

4. There were besides Ezekiel and Daniel three prophets during the first part of this period, viz; Haggai, Zechariah and Malachi.

5. Read Josephus for the history of the Jews between the Old and New Testaments.

Questions.

1. When was the book of Ezra written and by whom?

2. What was Cyrus' proclamation?

3. How many returned from captivity?

4. When was the foundation of the temple laid?

5. Tell how the building of the temple was hindered?

6. Who was Zerubbabel? Darius? Artaxerxes?

7. Why did Ezra pray unto God?

8. Tell about Esther and how she saved her people. Who was Ahasuerus? Mordecai? Where was Shushan?

9. Give date and authorship of Nehemiah.

10. What was the condition of the Jews in the time of Nehemiah? Who was Nehemiah?

11. Who was Sanballat?

12. Who was Belshazzar? What of his death?

13. What length of time intervened between the Old and New Testaments?

Lesson 9. Birth of Christ to the Ascension.

"The fullness of time" has now come. Gal. 4:4. God has brought it to pass as he had foretold in the prophets.

I. *Scriptures to be Studied.*

1. Matthew, Mark, Luke and John. This lesson embraces the history of Christ.

2. Study carefully these 89 chapters; they bring the history down to within ten days of the Day of Pentecost, A. D. 30.

Questions.

1. Why did four different men write the life of the Savior?

2. Give a brief history of each of the four writers.

3. Who was the "Word"? Jno. 1:1-3.

4. How many generations from Abraham to Christ? (Matt.)

5. What is the meaning of "Emmanuel"? Who foretold Christ as such? When?

6. What was the extent of Herod's dominion when Chrst was born?

7. Tell about the wise men. Who were they?

8. What was the mission of John the Baptist?

9. Tell about the baptism and temptation of Christ.

10. What lessons from the sermon on the mount?

11. What city was the Savior's home during most of his life?

12. What was Christ's first miracle? Mention the different kinds of miracles wrought by Christ.

13. Why was it that large multitudes followed Jesus?

14. Give particulars of sending out the twelve under the first commission. How did the great commission differ from this?

15. What brought up the subject of the "blasphemy against the Holy Spirit?"

16. How many, and what lessons from his parables in Matthew 13?

17. Mention the main facts in the life of Christ from Matt. 14 to the 24th chapter.

18. What lessons from the parables of the Ten Virgins and Talents?

19. How many and what trials of Christ before he was crucified?

20. Describe the crucifixion, burial and ascension.

21. What were Christ's miracles written for?

Lesson 10. Ascension to the Close of the Apostolic Age.

We begin with the Ascension and trace the history of the Apostles down to the death of John about A. D. 100. This lesson, therefore, embraces something like 70 years.

I. *Scriptures*: *Acts, Historical portions of the Epistles, Revelations.*

1. We have a more complete history of Paul than that of any other of the apostles.

2. Important lessons in the book of Acts: Descent of the Spirit and conversion of the 3000; great persecutions against the church; conversion of Paul; spread of the gospel among the gentiles; and important transactions in Paul's life.

Questions.

1. After the Ascension, where did the Apostles go? Why? What occurred ten days later?

2. How many and what nationalities were present in Jerusalem on the day of Pentecost?

3. What was the effect of Peter's sermon that day?

4. What resulted from another sermon a little later?

5. What can you say of Ananias and Sapphira? Who was Gamaliel?

6. What occurred when the disciples were multiplying greatly?

7. Who was Stephen and how did he die?

8. How was the gospel introduced into Samaria? Who was Philip? Was Simon really converted?

9. What other work did Philip do?

10. Mention particulars of the conversion of Paul, also of Cornelius and his household.

11. Which Herod is mentioned in Acts 12? What about him?

12. How were Paul and his company sent out to do missionary work among the Gentiles?

13. How many journeys did he make?

14. Mention the countries and cities which Paul visited. Where were churches established?

15. Who were Paul's traveling companions and co-laborers?

16. Tell about the latter part of Paul's life.

17. How many letters did Paul write, and where was he when he wrote them?

18. Give the history of Peter. Of James and John. Of Timothy. Of Titus.

19. Where was Patmos? Cyprus? Crete? Ephesus? Salamis? Clauda? Neapolis?

20. Who was Diana? Agrippa? Publius? Manaen? Dionysius? Crispus? Gallio? Caesar?

GOD AND HIS WORKS.

Lesson 1. God in Creation.

Introduction:—God is. The great fundamental doctrine of the Bible is the existence

of God as the Great and only First Cause of all things.

I. *God (Elohim) is the fourth word from the beginning of divine revelation, Gen.* 1-1, *and Moses introduces Him as the Creator of heaven and earth.*

1. "God Almighty" (El Shaddai). Gen. 27:1; 28:3.

2. "Jehovah" or the "Lord." Ex. 6:3; Psa. 83:18; Isa. 12:2; 26:4.

3. "I AM." Ex. 3:14; John 8:58; See also Rev. 1:4.

II. *God is the foundation of all true religion.*

1. "One Only." Deut. 4:35; 6:4; Isa. 44:6-10; Mark 12:29; Eph. 4:6.

2. "Let us make man." Gen. 1:26, does not teach a plurality of Gods, but a plurality of persons in the Godhead. See Matt. 28:18-19; 1 John 5:7.

3. Pharaoh's skeptical question, Ex. 5:2, is answered on nearly every page. Isa. 57:15; 1 King 8:27.

III. *God in Creation the first thing revealed.* Gen. 1:1.

1. There are three theories: (1) All things are eternal. (2) All things came by chance. (3) God created all things. That the third one is correct, *nature, reason* and

revelation all testify. Psa. 19:1-2; Isa. 40:22; Rom. 1:19-20; Acts 14:17; Psa. 33:6; Isa. 42:5; Heb. 3:4.

2. "Worlds were framed by the Word of God." Heb. 11:3; John 1:1-3.

3. "Thou hast created all things." Rev. 4:11; Eph. 3:9; Rev. 10:6; Ex. 20:11.

4. Study Genesis, first and second chapters, and the following additional references: Heb. 1:10; Psa. 8:3; 33:6-9; 89:11-12; Jer. 10:12; 51:15, 16; Zech. 12:1.

Questions.

1. What is the great fundamental doctrine of the Bible?

2. What are the Hebrew names of God, and what are their meanings?

3. Give the names of some of the gods of the heathen, mentioned in the Bible, and quote three passages proving there is only one true God.

4. Please give two Scripture answers to Pharaoh's skeptical question.

5. State the different theories as to the origin of all things, tell which one is correct, and give proofs.

6. What do you understand by this sentence: "The worlds were framed by the word of God?" Heb. 11:3.

7. Give the order of creation in the first chapter of Genesis.

8. Read Rev. 10:6, and Ex. 20:11, mention what the Lord made, and tell what you understand by "six days."

9. What did the Psalmist and Jeremiah say as to the origin of all things?

10. What do you understand by this expression: "Let us make man in our image?"

Lesson 2. God in Redemption.

Introduction:—God is Redeemer and Savior. Ex. 15:13; Deut. 9:26; Isa. 5:11; Psa. 19:14; Luke 1:68; Psa. 37:39.

I. *God Planned the great Scheme of Redemption.*

1. Redemption is not an after thought with God. Acts 15:18.

2. He purposed from the foundation of the world to save man. 2 Tim. 1:9; Rom. 8:28; 16:25-26; Eph. 1:4; 3:11; Tit. 1:2; 1 Pet. 1:20.

3. Religion was instituted in the Garden of Eden. Gen. 2:16-17, and all of third chapter.

4. As soon as man sinned, God began to reveal His plan concerning man's salvation. Study Gen. 3:15, and the references: (1) "Thy seed," the wicked. Matt. 3:7; 13:38; John 8:44; Acts 13:10. (2) "Her seed," the Christ. Isa. 7:14; Matt. 1:23-25; Gal. 3:16. (3) "It shall bruise thy head." Rom. 16:29; Heb. 2:14; 1 John 5:5; Matt. 4:1-11.

5. Sacrifice was introduced in very earliest times. Gen. 4:1-5; (Heb. 11:4); Gen. 8:20. Every bloody sacrifice looked to Christ. Heb. 9:26. Study the various kinds of sacrifices required in the law, and recorded in Exodus and Leviticus.

6. During the Patriarchal Dispensation, God was teaching a personal or family religion.

(1) Noah and his family. Gen. 6th to 9th; 1 Pet. 3:18-21.

(2) Abraham chosen to preserve the true religion. His obedience, altars, and sacrifices, are all lessons looking to a more glorious dispensation. Gen. 12:1 down to 22:14; Gal. 3:16-18; Jas. 2:21-24; Rom. 4:1-25.

(3) Israel's bondage and deliverance from Egypt are manifestations of God's redeeming power.

7. The entire Israelitish history from the giving of the law to the deliverance from Babylon reveals the mighty hand of God in the redemption of his people.

8. Finally, God's purpose in man's redemption was consummated in the person of His Son. See Mal. 4:2; Matt. 1:18-25; John 14:6; Luke 19:10; Acts 2:23; 3:18; and read all of the four Gospels.

QUESTIONS.

1. When did God plan the great scheme of redemption?

2. If God knew that man would sin before hand, was man responsible for sinning? Why?

3. When was religion instituted, and what was man's condition in the garden?

4. Explain Gen. 3:15, and John 8:44.

5. What scriptural reason have we for believing that God had given instruction concerning sacrifice as early as the days of Abel?

6. Mention the various kinds of sacrifices required under the law.

7. Give some of God's dealings with the people during the Patriarchal Dispensation, and tell how long that dispensation lasted.

8. If the crossing of the Red Sea, the giving of the Law, and the setting up of the Tabernacle are typical lessons, what great fact does each one typify?

9. Give particulars of the division of the kingdom about the end of Solomon's reign. What lessons from this?

10. Were the crucifiers of the Savior responsible for putting him to death? Why?

LESSON 3. GOD IN REVELATION. NO. 1.

Introduction: God has revealed himself in six ways: Through Voices, Dreams, Visions, Angels, Prophets, and His Son.

I. *This lesson embraces the first three.*

1. Sometimes God spoke in an audible voice. See Gen. 3:8-10; 1 Sam. 3:4; 1 Kings 19:9-18; Matt. 3:17; 17:1-6; 2 Pet. 1:19; study also Ezek. 10:5; John 12:28; Acts 9:1-7; Rev. 1:10; Isa. 6:1-9.

2. At other times, God spoke in visions and dreams. Gen 46:2; Num. 12:6. God made rvelations to the following persons through dreams and visions:

(1) Abraham. Gen. 15:1-12.

(2) Jacob. Gen. 28:10-20.
(3) Laban. Gen 31:24-29.
(4) Joseph. Gen. 37:5-11.
(5) Pharaoh. Gen. 41:1-36.
(6) Nebuchadnezzar. Dan. 2:1-49.
(7) Daniel. Dan. 7:1-4; 8:1-27.
(8) Zechariah. Zech. 1:1-11.
(9) Solomon. 1 Kings 3:5.
(10) Joseph. Matt. 1:20; 2:17.
(11) Ananias and Paul. Acts 9:10-12; 2 Cor. 12:1-21.
(12) Peter. Acts 10:9-19.

From these references it is evident that God has impressed many lessons on both saints and sinners through dreams and visions.

Questions.

1. How did God reveal himself to Adam?
2. How did God speak to Samuel and Elijah?
3. Tell what God said to Noah before he built the ark.
4. Tell about the revelation God made to Abraham. When was this? How long since he left Haran? Compare Gen. 15:1-12 with 12:4.

5. What great lesson did God impress upon Jacob in a dream.

6. What can you say concerning the revelations God made to Laban, Zechariah, Solomon and Ananias?

7. What great lesson in Nebuchadnezzar's dream? What was the "fourth kingdom"? Dan. 2:40. What was the "stone that was cut out of the mountain"? Dan. 2:45.

8. What were Joseph's two dreams? Tell how Joseph became a great man in Egypt.

9. When did Joseph die, and how old was he at the time of his death? What period of time does the book of Genesis cover?

10. How many and what revelations were made to Paul and Peter?

LESSON 4. GOD IN REVELATION. No. 2.

Introduction: We will now study those revelations which were made,

I. *Through Angels and Prophets.*

1. Angels. Gal. 3:19; Heb. 2:1-3; Acts 7:53. Revelations were made through angels to the following persons:

(1) Abraham and Lot. Gen. 18th and 19th chapters.

(2) Gideon. Judges 6:11-22.

(3) Daniel. Dan. 8:16.

(4) Mary Magdalene. Matt. 28:1-7.

(5) The Shepherds. Luke 2:8-14.

(6) Philip. Acts 8:26.

(7) Read also Acts 5:19; 12:7; 10:3; 27:23, 24.

2. Prophets. God has used many prophets in revealing his will to mankind. See Hosea 12:10; 2 King 17:13; Acts 3:24; Acts 1:16; 3:18.

(1) Study next *how* God spoke to the people through Moses, Samuel, and all the prophets down to Malachi. See Deut. 34:10; Num. 12:6-8; Ex. 33:11; 1 Sam. 3:20; 9:15; 15:1; Acts 13:20-21.

(2) Study *carefully* the opening verses of all the sixteen prophetical books from Isaiah to Malachi, for the manner in which the revelations were made and the time when.

QUESTIONS.

1. How has the Lord communicated his will to man?

2. What important communications did angels make to Gideon and Mary Magdalene? What space of time between them?

3. What did an angel once say to Philip the evangelist, and to Paul the Apostle?

4. How did the Lord speak to Moses, Samuel and Isaiah?

5. When, where and how did Ezekiel receive his communication from the Lord?

6. When Hosea prophesied, who were kings of Judah, and who was king of Israel?

7. When did Joel, Obadiah, and Micah deliver their prophecies, and what does Joel say of drunkards? (*See Margin of Bible for dates.*)

8. What new expression is used by Nahum and Habakkuk in the introduction of their prophecies? How many years did they live apart?

9. Who was king when Zephaniah prophesied, and what is the meaning of "consume" in Zeph. 1:2?

10. Did Haggai, Zechariah, and Malachi deliver their prophecies before, during, or after the Babylonian captivity? Give the date of each?

LESSON 5. GOD IN REVELATION. No. 3.

Introduction: All previous revelations were preparatory to the perfect revelation through Christ.

I. *"God hath spoken unto us by his Son."* Heb. 1:1-2.

1. The Hebrew letter reveals Christ as better than the angels, 1:4—more glorious than Moses, 3:3; better than Priests, 3rd to 7th chapters; surety of better Testament, 7:22; mediator of better covenant, 8:6; better offering, 10:10-18.

In all these respects Jesus is a *better* and more *complete* revelation of God.

II. *Christ is the fullness of Divine Revelation.* Gal. 4:4; Matt. 17:5; John 1:18; Matt. 11:27.

1. The four gospels make known his character and work.

(1) God's love. John 3:14-16.

(2) The Door, the Way, the Light. John 10:1-9; 14:6; 8:12; 12:35-46.

(3) The Water and Bread of Life. John 4th to 6th chapters.

(4) That ye might believe. John 20:30-31; 2:1-11, 18-25.

2. Acts reveals the establishment of the church, law of pardon and gift of the Holy Spirit, 2:1-47; 8:5-39;9:1-17; 10:1-48; 16:-12-35; also the spread of the gospel in Gentile lands, Acts 11th chapter to the conclusion of the book.

3. The Epistles make known practical Christian duties and motives to perseverance. Rom. 8:35-39; 1 Cor. 15:57-58; 2 Pet. 1:5-10; 1 Cor. 10:1-13; 2 Pet. 3:16-17.

4. The book of Revelation foretells the fortunes, trials, and final victory of the church.

QUESTIONS.

1. How is Christ a more perfect revelation than had been made before?

2. What is the meaning of "Fullness of Time?" Gal. 4:4.

3. What is the design of the "Four Gospels?"

4. How is Jesus the Door, the Way, and the Bread of Life?

5. How is Jesus the "Light of the World," and what prophet foretold Him as the "Sun of Righteousness?"

6. What do we learn from the study of Acts?

7. Describe Paul's conversion, and tell how he was led to believe in Christ.

8. How many epistles? What do we study them for?

9. How can the christian keep from falling? Was our election made sure before the world began?

10. What is the design of Revelation? Who wrote it? When? Where?

LESSON 6. GOD IN REVELATION. No. 4.

Introduction:—We come now to the instruments of Divine Revelation, or the Books and Writers of the Bible. Remember that the Bible is composed of sixty-six different books by about thirty-six different writers. It was written during a period of about 1600 years.

I. *The Pentateuch,* consisting of Genesis, Exodus, Leviticus, Numbers and Deuteronomy, was written by Moses. See Deut. 31:24. Time covered, B. C. 4004 to 1451.

II. *The Twelve Historical Books from Joshua to Esther.*

BOOKS	WRITERS	TIME COVERED
Joshua	Joshua	1451 to 1426 B. C.
Judges	Samuel	1426 to 1120 B. C.
Ruth	Samuel	Unknown.
1 and 2 Samuel	Samuel	1120 to 1016 B. C.
1 and 2 Kings	Unknown	1016 to 588 B. C.
1 and 2 Chronicles.	Ezra	4004 to 588 B. C.
Ezra	Ezra	536 to 456 B. C.
Nehemiah	Nehemiah	445 to 413 B. C.
Esther	Mordecai	Unknown

III. *The Five Poetical Books from Job to the Song of Solomon.*

BOOKS	WRITERS	TIME COVERED
Job	Job or Moses.	Not certain.
Psalms	David, etc.	1520 to 400 B. C.
Proverbs	Solomon	About 1000 B. C.
Ecclesiastes	Solomon	In his old age.
Song of Solomon.	Solomon	In his younger days

QUESTIONS.

1. About how many persons wrote the Bible? Name them.

2. Which is first book in order of time? Who wrote it? When?

3. Mention the five greatest events recorded in Genesis.

4. Mention the great events recorded in Exodus.

5. What were the people doing while Moses was in the Mount receiving the Law?

6. What serious mistake did Moses make which kept him out of the promised land?

7. What New Testament writer mentions a great event with which Joshua was connected? How many years was this after Joshua's death?

8. How many years of history are crowded into the book of Judges?

9. Give the historical extent of 1 and 2 Samuel; 1 and 2 Kings; 1 and 2 Chronicles.

10. Tell what you know of Ezra, Nehemiah and Esther. Who was Artaxerxes?

11. Give authors, dates and main characteristics of the five Poetical books.

LESSON 7. GOD IN REVELATION. No. 5.

Introduction:—We continue the study of books and writers, or the instruments of Revelation.

I. *The Sixteen Prophetical books of the Old Testament.*

We class them in three divisions as follows:

1. Those who prophesied before the captivity.

WRITERS	TIME B. C.	PLACE.
Jonah	856-784	Kingdom of Israel
Joel	800	" "
Amos	787	" "
Hosea	810-725	" "
Isaiah	810-698	Kingdom of Judah
Micah	758-699	" "
Nahum	720-698	" "
Zephaniah	628-622	" "

2. Those who prophesied during the captivity

WRITERS	TIME B. C.	PLACE.
Jeremiah.	625-586	Kingdom of Judah
Habakkuk*	(?)	" "
Ezekiel	595-574	Chaldea
Daniel	606-534	Babylon
Obadiah	588-583	Kingdom of Judah

(*) Some think Habakkuk lived before the captivity.

3. Those who prophesied after the return.

WRITERS	TIME B. C.	PLACE.
Haggai	520	Kingdom of Judah
Zechariah	520-518	" "
Malachi	435-397	" "

While Lamentations is a poetical book, yet it is placed with the prophetical books. It was written during the captivity by Jeremiah.

Questions.

1. How many and which prophets were of the Kingdom of Israel? of Judah?
2. Which is the first prophetical book in the order of time?
3. How many years from Jonah to Ezekiel?

4. What prophecy does Joel make concerning the "sun and moon?" Has it been fulfilled? When?

5. Where was Amos when he began to prophesy?

6. What were the subjects of Obadiah, Amos, Hosea, Micah, and Nahum?

7. Which prophets were contemporary with Isaiah?

8. About how long after Hosea began to prophesy till the Kingdom of Israel was carried into captivity?

9. How long did the Babylonian captivity last? When was the return?

10. What can you say of the book of Lamentations?

11. What period of time do the prophetical books cover?

LESSON 8. GOD IN REVELATION. No. 6.

Introduction:—We now take up—

I. *The New Testament Books and Writers.*

A period of about sixty years transpired from the time the first New Testament book was written till the last one was composed.

1. *Biographical.* The Four Gospels tell about the wonderful life of the Savior.

BOOKS	TIME A. D.	PLACE
Matthew	38	Judea
Mark	63	Rome
Luke	63 or 64	Achaia
John	Uncertain	Ephesus

2. *Historical.* The Acts of Apostles was written by Luke in about A. D. 63 or 64.

3. *Epistolary.* The twenty-one letters were written to the saved.

BOOKS	TIME A. D.	PLACE
Romans	58	Corinth
1 Corinthians	57	Ephesus
2 Corinthians	58	Philippi
Galatians	57 or 58	Corinth
Ephesians	61	Rome
Philippians	62	"
Colossians	61	"
1 & 2 Thessalo'ns.	52	Corinth
1 and 2 Timothy	64?	Macedonia
Titus	65	" "
Philemon	62	Rome
Hebrews	62?	Italy
James	61?	Judea
1 Peter	58	Babylon
2 Peter	(?)	Rome
1, 2 and 3 John	68 or later	Ephesus
Jude	64	Unknown

4. *Prophetical.* The Book of Revelation was written by John in A. D. 96 on the Isle of Patmos.

QUESTIONS.

1. What is the design of the first four New Testament books?

2. Give characteristics of Acts, tell who wrote it and why.

3. How many and which of the epistles were written to churches?

4. How many of Paul's letters were written to individuals?

5. Why did Paul write a second letter to the Corinthians?

6. Where was Ephesus? Philippi? Thessalonica? Corinth?

7. Why did Paul write to Timothy and Titus? Where did Titus labor for a considerable portion of his time?

8. Who was Philemon?

9. What was the Hebrew letter written for?

10 What are the characteristics of the seven "general epistles?"

11. Who was Jude? Of which James was he a brother?

12. Which John wrote the Revelations? When? Why?

13. Who was emperor of Rome at that time?

THE END.



ERRATA.

In spite of the greatest care in correcting the proof, some minor errors still appear in the book. The reader will meet with certain typographical errors, the omissions and additions of certain letters, and capitals for small letters in a few instances. The reader will find a few of the corrections below:

Page 16, sixth line from foot, read Auriga for Aurega.
Page 17, near foot read Pollux for Pollox.
Page 21, near the foot, read Draco for Darco.
Page 22, near the top, read northern declination for Norther Declination.
Page 26, middle of page, read Pisces for Pices.
Page 29, tenth line from foot, read Hebrews for Hebrew.
Page 32, tenth line from foot, read any for and.
Page 41, third line from foot, read certainty for certainity.
Page 83, following 4, read Through for Trough.
Page 88, seventh line from foot, read diameter for liameter.
Page 104, in head of Lesson 4, read Led for Lead.
Page 121, third line from top, read awhile for awile.
Page 131, following 3, read Epistolary for Episolary.
Page 137, eleventh line from top, read Shechem for Sechem.

You will doubtless meet with a few other like errors, but I trust you will remember that the author has had to read and correct the proof while laboring under a multiplicity of duties.

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